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41673
S. M. T. 2 (a)

D. A. Brown



Small Arms Training

**Volume I, Pamphlet No. 7
(India)**

303-inch Machine Gun

Part II.—Training

1940

PUBLISHED BY THE MANAGER OF PUBLICATIONS, DELHI
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G. S. M. T. 2 (a)



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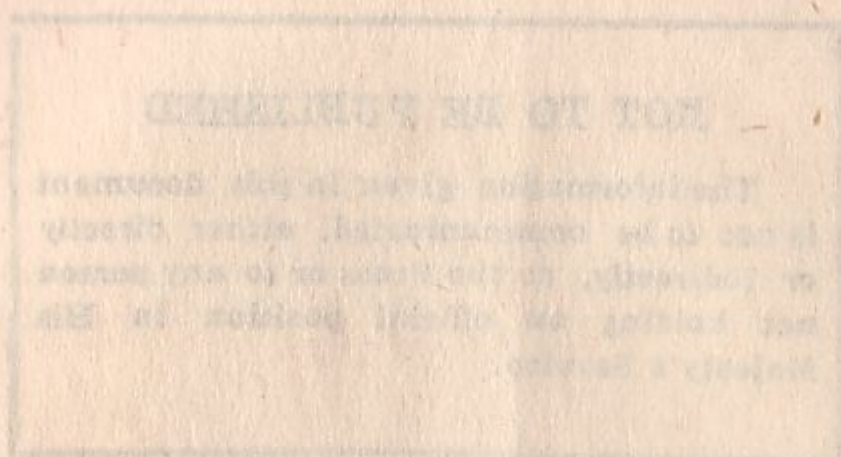
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GENERAL.

Small Arms Training, Vol. I, Pamphlet No. 7, Part II, deals in general with the handling of the gun. It aims at training gun numbers in drill, and the application of drill to ground, thus fitting a man to take his place as a member of a machine gun team in battle.

It further aims at training headquarters of platoons and sections in their duties in the field.

The drills are arranged to meet the average conditions of mobile warfare. Latitude must be exercised in their application. For example, in an extensive programme shoot Nos. 2 may require assistance.

These drills are generally appropriate to cavalry. The duties given for the infantry are applicable to equivalent ranks in the cavalry.

DEFINITIONS

(See also S.A.T., Vol. I, Pamphlet No. 7, Part III.)

Arc of fire.—Arc over which it is desired that the guns can bear from a given gun position. Its boundaries are described as “right of arc” and “left of arc”.

Auxiliary aiming mark.—A gun aiming mark indicated by the fire controller in the target area, with the object of maintaining fire on the target. It is employed when, for any reason, a point of aim on the target is not used.

Deflection.—A lateral displacement of the lines of any or all guns.

Direct fire.—When the gun is laid directly on the target by means of the backsight and foresight.

Fire control.—The necessary arrangements and orders for hitting the target.

Fire controller.—The individual responsible for giving the orders for the engagement of a target to the men of a fire unit.

Fire direction.—The term applied to instructions given by the commander of more than one fire unit to the fire unit commanders as to how their fire is to be applied.

Gun aiming mark.—A mark on which a gun is laid to cause the bullets to strike the correct position on the target for that gun.

In action.—A machine gun is said to be in action when it is mounted with reference to its arc of fire and the necessary men, equipment and ammunition are present at the gun to enable fire to be opened when ordered.

Indirect fire.—When the gun is laid to hit a given target by other means than by laying on it direct.

Laying.—The process of elevating (or depressing) and traversing a gun until its axis is made to point in any given direction. On conclusion of this process the gun is said to be laid.

Line.—The direction in which a gun or guns are pointed.

Near limit of arc.—The near edge of the zone on which fire is required.

Observed fire.—When the effect of the fire can be observed from the gun or from the fire controller's observation post.

Observation post.—A post from which a particular area can be kept under observation or from which artillery and machine gun fire can be controlled and corrected.

Pivot gun.—The gun used as a basis for calculation.

Position in readiness.—The position at which the guns are taken off the vehicle or pack animals preparatory to coming into action. It will normally be the nearest point to the gun positions to which the vehicle or pack animals can be brought.

Registering.—The recording of the direction and elevation necessary to hit any given target as found by ranging.

Rendezvous.—A pre-arranged place of assembly (R.V.).

Zero line.—A line of reference, on which all guns are parallel, and from which switches are measured.

Safety Precautions

On all occasions when the gun and dummy cartridges are used for instructional purposes the instructor will carry out the following safety precautions :—

- i. Inspect all locks to ensure that the striker does not protrude through the firing pin hole.
- ii. Inspect all ammunition to ensure that all cartridges are dummies.

NOTE.—When instruction is being given in mechanical subjects, D. P. stores, if available, will always be used.

SECTION X.—ELEMENTARY GUN DRILL

1. During elementary gun drill the gun will be mounted to suit the sitting position, but emphasis will be laid on the fact that, on active service, the tripod will always be adjusted to suit the ground and available cover.

2. The object of elementary gun drill is to render the man proficient in the duties of gun numbers in handling the weapon.

3. It aims at teaching the man :—

- i. To mount and dismount the gun.
- ii. To load and unload the gun.
- iii. To bring the gun into action.
- iv. To cease firing.
- v. To adjust the sights and lay the gun.
- vi. To fire the gun, to stop firing, and to go on firing.
- vii. Consistency of tap and adjustment of clamp, traversing and the swinging traverse.
- viii. Controlled corrections, direct and indirect fire.

Instructor's Notes

Methods of carrying out the drill.

1. The stores required vary according to the portion of the drill which is being carried out, but for all drills the squad requires a gun, tripod, spare parts case complete, condenser and tube, and belt box with belt, belt-box carrier and dummy cartridges. When additional stores are required, details are given in the instructional notes. The condenser tube used will consist of a piece of $1\frac{1}{2}$ -inch rope, six feet long.

2. Laying out the stores.—Before the squad falls in, the gun and tripod will be placed in line on the ground a few paces apart, tripod on the left with the legs to the rear: the muzzle of the gun pointing to the front, the condenser tube attached, and the spare parts case close to and on the right of the gun. The belt box and condenser will be placed about a pace apart with the condenser on the right a few paces in rear of the gun and tripod, belt box carrier beside belt box.

3. Fall in.—The squad is fallen in, in single rank. The instructor details any three men. He falls them in a short distance in rear of the stores and numbers them off. The remainder of the squad under instruction is placed in such a position that the maximum benefit is derived although they themselves are not at the moment acting as Nos. 1, 2 or 3.

If at any time the instructor wishes to change round Nos. 1, 2 and 3, he should order "Fall out 1". No. 1 becomes No. 3, No. 2 becomes No. 1 and No. 3 becomes No. 2, the detachment renumbering at once, the instructor detailing three fresh numbers to take their place when he wishes to do so.

4. The instructor must see that the standard of drill is maintained throughout, that the Nos. remain still and correctly placed on the completion of any necessary movement, particularly in the sitting or lying positions.

When the instructor wishes to explain, criticize or demonstrate, he will first order "Rest" to allow of relaxation of the muscles. Before the drill is resumed he will ensure that the Nos. adopt the correct position, alert and ready for any order. This will be effected by the order "Position".

So far as is possible, the duties of No. 1 will first be taught, and practised by the whole squad. The instructor will then teach and practise the duties of Nos. 2 and 3 in that order, before drilling the detachment collectively.

5. The orders given by the instructor are given in inverted commas at the head of each paragraph. All orders will be given verbally.

LESSON 40—TAKE POST

"Take post".

The detachment will turn to the right, with the exception of No. 1. No. 1 doubles forward and lies down on the left of the tripod. He inspects the tripod to see that the elevating and crosshead joint pins are properly in position and turned down, both elevating screws equally exposed, traversing clamp sufficiently tight to prevent the crosshead from swinging round when the tripod is being carried, the crosshead over the rear leg, direction dial secure, and all three legs together and clamped securely.

When Nos. 2 and 3 have reported to him, he reports "All correct" (or otherwise), to the instructor.

No. 2 doubles forward, lies down on the right side of the gun. He places the strap of the spare parts case on his right shoulder, and inspects the gun to see that the muzzle attachment is correctly adjusted and the condenser tube fitted, the feed block is in the gun, and the front cover locked, the sliding shutter is closed, the tangent sight set at 600, the lock is in the gun, and the "T" fixing pin is screwed home and vertical. He reports "**Gun correct**" (or otherwise) to No. 1.

No. 3 doubles forward and lies down between the condenser and belt box. He inspects the belt box to see that the rounds are in the front of the belt and pointing the right way. He closes and fastens the box. He inspects the condenser to see that the cap is screwed in position and that the filler is secure. He reports "**Ammunition and condenser correct**" (or otherwise), to No. 1.

All Nos. will now lie facing forward with their arms folded.

Note.—When the ground is too wet, the detachment should be instructed to kneel instead of lying down, but waterproof sheets should be used to avoid this when possible.

LESSON 41.—MOUNT AND DISMOUNT GUN

Instructor's Notes.

The instructor will indicate to No. 1 the spot over which the socket is to be mounted and the direction in which the gun will point. This spot should be a few yards in front of No. 1.

The action of No. 1 in mounting and dismounting the TRIPOD will be taught first, ending and beginning respectively at the point where No. 1 is lying beside the tripod, and has withdrawn the pins.

The remaining duties of No. 1 and the duties of Nos. 2 and 3 will then be taught in that order.

"Mount Gun".

No. 1 jumps to his feet, picks up the tripod and doubles forward with it, placing it on the ground with the socket on the spot indicated. He lies down on the left of the tripod, head to the front, loosens the jamming handles of the two front legs and opens them by rocking the tripod first to one side and then to the other. He then rests his left elbow on the ground, and supports the tripod with the left hand beneath the socket. He then ensures that the socket is upright and over the spot indicated, and clamps up the front legs. He removes the elevating and crosshead joint pins. He assists No. 2 as soon as he arrives to place the gun on the tripod, slides in the crosshead joint pin and turns the handle down, supporting the barrel casing as necessary with his left hand. He swings round, keeping all parts of his body below the gun, and sits down behind it.

He levels his gun by means of the elevating wheel, tests by tapping the traversing handles to see if the adjustment of the traversing clamp is approximately correct, and sits, looking straight in front of him, with his elbows supported by the inside of his thighs, his third and little fingers round the traversing handles, forefingers on top, second finger underneath the safety catch, and thumbs resting lightly on the thumbpiece.

No. 2 opens the sliding shutter, and picking up the gun doubles forward with it to the right side of the tripod, arriving as No. 1 is about to withdraw the pins. Placing the right arm under the barrel casing, he lies down beside the tripod. Assisted by No. 1 he places the gun on the tripod. As soon as No. 1 has inserted the crosshead joint pin, No. 2 inserts the elevating joint pin, retaining his hold with his left hand on the right traversing handle until the pin is home.

He places correctly the belt box which No. 3 has brought up to him, and inserts the condenser tube into the condenser.

Finally he lies on his right side on the right of the gun, his head in line with, but below the level of the feed block.

No. 3 disengages the quick release strap of the belt box and unscrews, but not completely so, the cap of the condenser. He doubles forward to the right of the gun, carrying the belt box and belt box carrier in his left hand, the condenser in his right hand, arriving just as No. 2 lies down. He places the condenser in a suitable position

near the tripod and the belt box within easy reach of No. 2, with the quick release strap towards the feed block. He removes the cap of the condenser, doubles back to a suitable position and lies down, bringing with him the belt box carrier if not required by No. 1.

Note.—When the gun has been mounted and Nos. 1, 2 and 3 are in position, the instructor should remark whether:—

The actions of Nos. 1, 2 and 3 and their final positions were correct.

The tripod is mounted with reference to the direction indicated.

The gun is level and cross-head over the rear leg.

The socket is upright and over the spot indicated.

The tripod is at a suitable height for No. 1 (until No. 1 has been taught to mount the gun in service positions the instructor will see that the rear leg is suitably adjusted before the gun is mounted).

The sliding shutter is open.

The traversing clamp is not too loose.

The elevating and cross-head joint pins are home and locked.

The jamming handles are really tight.

The belt box is close to and in line with the feed block, with the quick release strap disengaged, condenser in position and tube inserted in it.

The squad will be shown how to correct a leaning mounting on the first occasion it arises.

“Dismount Gun”.

No. 1 removes both pins, steadies the gun with his right hand and after No. 2 has removed the gun, replaces the pins and turns down the handles. He then swings round, keeping all parts of his body below the crosshead, until his head is to the front. He loosens the jamming handles of the front legs, and lowers the tripod gently to the ground. By rocking the tripod first to one side and then to the other, he folds up the legs and clamps up the jamming handles.

He reconditions his tripod, if necessary, as in “Take Post”.

No. 2 pushes the condenser and belt box away to the right and after No. 1 has removed the pins, lifts the gun off the tripod. He remains lying down whilst carrying out these operations. He rolls over to the Right with the gun above him and adopts his original position on the right of No. 1.

He then closes the sliding shutter and places the gun on the ground. He reconditions the gun, if necessary, as in “Take Post”.

No. 3 doubles forward, seizes the belt box in his left hand and the condenser in his right, and places them on the ground a few paces rear. He lies down between the belt box and condenser, reconditioning them as in “Take Post”.

Note.—The instructor will order “Replace stores” when he wishes the stores to be returned to their position as originally laid out.

LESSON 42.—LOAD AND UNLOAD

“Load”.

No. 1 pulls the crank handle on to the roller with the right hand, and advances his left hand to the left of the feedblock, ready to grip the belt. When No. 2 has passed the tag of the belt through the feedblock, No. 1 grips it and pulls the belt through the feedblock as far as possible. He must pull the belt gently and straight when doing so. He releases the crank handle and repeats the above movements. Whilst pulling the crank handle on to the roller the belt will be held but not pulled with the left hand.

No. 2 opens a belt box, seizes the end of the belt with the right hand at the point where the tag joins the fabric, forefinger along the tag and pushes the tag through the feedblock as far as possible. He must ensure that the belt is not twisted on entering the feedblock.

Emphasize that the belt must be pulled gently and straight through the feedblock. The men must avoid the natural tendency to pull it to the rear, i.e. towards No. 1, which might prevent the round being fed correctly into the feedblock.

Should any man exhibit a tendency to slur the loading motions it may be advisable to make him load “by numbers”, counting aloud while doing so.

The actions of Nos. 1 and 2 in loading and unloading will be taught together.

“Unload”.

If the tangent sight has been in use it will be lowered by the No. 1, using his left hand. At the same time, without touching the belt, he pulls the crank handle on to the roller twice in succession with the right hand, allowing it to fly forward again in each case. He presses the top and bottom pawls of the feedblock with his right hand, the top pawls with the fingers and the bottom with the thumb, taking care to keep his hand clear of the entrance to the feedblock. When the belt is being withdrawn and the last round is clear of the feedblock, he will press the thumbpiece.

No. 2 withdraws the belt from the feedblock when No. 1 presses the pawls, steadying the belt with his left hand near the belt box and his right hand near the feedblock. He packs the belt correctly in the box and closes the lid.

LESSON 43.—ACTION AND CEASE FIRING

“Action”.

Nos. 1, 2 and 3 perform the duties learnt in “Mount gun” and “Load”, the gun being loaded as soon as it is correctly mounted.

“Cease firing”.

Nos. 1, 2 and 3 perform the duties learnt in “Unload” and “Dismount gun”, the gun being dismounted as soon as it has been unloaded correctly.

LESSON 44.—CLEAR GUN AND STAND CLEAR

“Clear gun”.

No. 1 pulls the crank handle on to the roller, raises the rear cover, moves the lock from the lock guides, and eases the crank handle forward, allowing the lock to rest against the hinge of the rear cover. reports “Gun Clear”.

Note.—If it is desired to replace the lock in the gun and close the rear cover, but not to load the gun, the command “Lock in—cover down” may be used. If the gun is loaded, “Clear gun” will be preceded by “Inload”.

“Stand clear”.

Nos. 1 and 2 jump to their feet and stand at ease in rear of the gun, No. 2 on the right.

Note.—The order “Take post” will be used when it is desired that Nos. 1 and 2 should adopt their positions at the gun.

LESSON 45.—TO ADJUST THE SIGHTS AND LAY THE GUN

Instructor's Notes

Before the lesson is begun, instruction in aiming must have been given.

A few simple targets will be pointed out, the object being not to teach recognition, but clean and accurate handling by the No. 1.

The instructor should order “Lay” when he wants No. 1 to do so.

If no natural aiming points are available, a landscape target may be used, being placed at any convenient distance from the gun.

The gun will be loaded before the exercise begins.

“..... hundred (or fifty).....Indication.....lay”.

No. 1 raises the tangent sight and adjusts the slide to the range required. When ordered he begins to lay the gun by tapping the gun until the correct direction is obtained, and elevating or depressing until aim is correct. He orders No. 2 to loosen the traversing clamp when a large change in direction is necessary, and to tighten the clamp again when the gun is roughly aligned on the target. No. 1 retests his clamp.

When tapping the gun, or turning the wheel, No. 1 maintains control of the gun by keeping the disengaged hand on the traversing handle. When the gun is laid he orders “On” to No. 2, who raises his left hand in line with No. 1's shoulder; at the same time No. 1 releases the safety catch with his second fingers.

Should No. 1 fail to understand an order at any time he will call “Repeat”.

LESSON 46.—FIRE, STOP, AND GO ON

“Fire”.

No. 1 instantly presses in the thumbpiece as far as possible by a quick and even movement of the thumbs, keeping his eyes directed at the target. He will fire in bursts, keeping the thumbpiece pressed

for four or five seconds before releasing and pressing again, occasionally checking his aim between bursts. No. 2 lowers his hand.

“Stop”.

No. 1 immediately releases pressure on the thumbpiece and safety catch. He checks his aim, relaying on to the original point of aim if necessary.

Note.—The wheel should occasionally be turned while No. 1 is firing, in order to ensure correct relaying when “Stop” is ordered.

“Go on”.

No. 1 resumes the action as detailed under “Fire”.

LESSON 47.—CONSISTENCY OF TAP AND ADJUSTMENT OF CLAMP

Instructor's Note

The gun will be loaded.

1. To teach a consistent tap.

The object is to develop a consistent automatic tap, in order that the line of sight is displaced the same amount each time the gun is tapped.

Each man will be practised in tapping the gun in both directions. The instructor noting the consistency. Correct holding will be taken after each tap.

Note.—The instructor will explain the following points:—

- i. A strong tap with a tight clamp is preferable to a weak tap with a loose clamp.
- ii. When tapping with either hand, the gun must be held correctly with the other hand, and the safety catch kept raised.
- iii. The eyes must be directed to the front, and not at the rear end of the gun or along the sights.

2. To adjust the clamp.

Instructor's Note

Additional stores:—M. G. target (S.A.T., Vol. V, 1931, Plate 66).

The gun will be mounted and loaded 25 yards from the target.

The object is to ascertain the degree of tightness required in the traversing clamp in order that the line of sight may be displaced 15 minutes each time the gun is tapped.

The instructor will teach how to test and adjust the clamp. He will explain to the men that the interval between bulls, at a distance of 25 yards, subtends 15 minutes. He will ensure that if the gun moves too much or too little when the men are testing the clamp, that the clamp is altered and not the tap.

Whenever the gun is mounted or a new No. 1 takes post at the gun, No. 1 tests the adjustment. The instructor should point out the

importance of this and also the importance of the "feel" of the correct tightness, as later on no row of bulls will be available to assist in the adjustment.

3. Combination of consistency and adjustment.

The instructor will inform the No. 1 which way he has to tap and will then give a suitable range and order to get the gun laid on to one end of a horizontal row of bulls.

When ordered No. 1 will lay the gun on to the bulls' eye indicated.

On the order "Fire", No. 1 fires a burst, releases pressure on the thumbpiece, and strikes the traversing handle, deflecting the gun through an angle of 15 minutes. He fires another burst, taps as before, and will continue to do so, firing a burst after each tap until ordered to stop.

Note.—The instructor will explain that the object of this exercise is to test the man's consistency of tap and adjustment of clamp and will warn the No. 1 that in this particular case he will not check his aim or lay between bursts or on the command stop.

NOTES.—1. The men will be exercised in traversing in both directions.

2. Progressive instruction will be given in "tapping right and left" on a M.G. target.

LESSON 48.—OBLIQUE TRAVERSING

Instructor's Notes.

Additional stores:—M.G. target (S.A.T., Vol. V, 1931, Plate 66).

The instructor will explain that the object of this lesson is that in traversing the firer will combine consistency of tapping with maintenance of the line of sight on the target.

For drill in traversing the gun will be mounted and loaded 25 yards from the M.G. target.

The instructor will inform the No. 1 which way he has to traverse; and will then give a suitable range and order to get the gun laid on to one end of an oblique row of bulls.

No. 1 proceeds as in Lesson 47 except that after each tap, before firing again, he relays his gun on to the target immediately above or below the point to which his tap has carried it.

NOTE.—The instructor will warn the No. 1 in order that his accuracy in traversing may be ascertained, he will not check his aim or relay on the command "Stop".

LESSON 49.—SWINGING TRAVERSE

Instructor's Note

Additional stores:—M.G. target (S.A.T., Vol. V, 1931, Plate 66).

No. 1 loosens his traversing clamp and then lays as before on the right or left end of the target. When ordered to fire, he swings the gun slowly to the right or left maintaining pressure on the thumb-

piece throughout. He moves the gun, not by a movement of the fore-arms alone, but by keeping the upper part of the body fairly rigid and forcing it over in the required direction.

Note.—Explain that this method of traversing is only employed against linear targets at very close ranges, when the normal method of traversing is likely to prove too slow.

The following points will be explained:—

- i. The traversing clamp must not be so loose that No. 1 loses control of the gun, the vibration of the gun rendering it easy to swing.
- ii. The rate of movement should be such that the line of sight is moved about 1 yard in two seconds, when the target is 25 yards from the gun. The movement of the gun is almost imperceptible.
- iii. The thumbpiece should be pressed before the gun begins to move. The importance of the mounting being upright must be emphasized.
- iv. The above principles will be explained to the men, as proficiency can only be obtained when the gun is being fired.

LESSON 50.—CONTROLLED CORRECTIONS, DIRECT

Instructor's Notes

The gun will be loaded and fire opened before the lesson begins.

The object is to teach No. 1 to relay the gun after altering the sights in obedience to a correction in elevation.

"Stop.....Up (or Down).....Go on".

No. 1 adjusts his sights in accordance with the order, relays on to his original point of aim by turning the handwheel and continues firing.

LESSON 51.—CONTROLLED CORRECTIONS, INDIRECT

Instructor's Notes

Additional Stores:—Bar, Foresight and aiming post.

The object is to teach No. 1 to readjust the line of sight on to the aiming post after turning the handwheel in obedience to a correction in elevation.

The gun will be mounted, the bar foresight affixed, and an aiming post planted about 10 yards in front of it. The sights will be set at 2,500 yards, and the instructor will lay the gun on to the bull. The gun will be loaded and fire opened before the exercise commences.

Before this lesson No. 1 must have received instruction in the use of the graduations on the elevating handwheel and aiming over the bar foresight. He should have an elementary knowledge of the function of the aiming post. No. 2 must have received instruction in his position at the

gun in indirect fire and the acknowledgment of orders in that position.
Clinometer not introduced.

"Stop.....All.....Up (or down).....Go on".

No 2 acknowledges the receipt of the correction in elevation.

No. 1, using the graduations on the elevating wheel, elevates or depresses the gun through the angle ordered. He readjusts his line of sight on to the bull by moving his tangent sight slide up or down.

SECTION XI.—TESTS OF ELEMENTARY GUN DRILL AND INSTRUMENTS.

1. The following tests have been devised to assist officers in testing the efficiency of their men in elementary gun drill, and to ensure that no detail of the drill is overlooked. It is important that these tests should not be considered solely as competitions against time, for although quickness is necessary, accuracy is the first essential. No man should therefore be passed as efficient unless all the points are correctly carried out, even though he may complete them in the standard time. Whilst passing the tests for accuracy, men who slightly exceed the standard time should be tested again before being put back for further instruction.

2. The tests must be carried out in strict accordance with the detailed instructions given under the appropriate paragraphs of elementary gun drill, for unless the smallest details are insisted upon, the time limit will not be applicable. In carrying out the tests time can be saved if the first detachment complete tests i to v consecutively, the remainder can be carried out as convenient.

3. Other ranks, except full rank N.C.Os., will qualify annually in tests i to xiii and xv. Full rank N.C.Os. will qualify in their first year only, in the support platoon.

It should be noted in tests i to v that all numbers are being tested in their own particular duties as No. 1, No. 2 or No. 3, and the tests should not be regarded as a test of the No. 1 only. Therefore a man is not considered to have passed these tests until he has passed in the duties of all numbers.

4. It is essential for each man to have passed tests i to x before proceeding with the A. R. C.

A record will be kept by each platoon commander and produced for inspection as required.

5. Method of conducting the tests.

The conditions of the test will be explained before the test begins including the time allowed for the test, and when the time allowance begins and finishes.

NOTE.—If a stop watch is not available, a time keeper must be appointed.

Stores required:—As for all E.G.D. in tests i to ix.

Words of command will be given as in the appropriate heading in E.G.D.

Test No. xiv will be carried out by full rank N.C.Os. only.

The tests are as follows:—

i. To erect the tripod and mount the gun on the command "Mount gun".

Nos. 1, 2 and 3 will take post. The position where the gun is to be mounted to be not more than 5 yards away.

Points to be observed.—All the points given in Lesson 41.

Standard time: 30 seconds.

ii. To load the gun on the command "Load".

Belt with a few dummy rounds at the end, properly packed in the box, which will be closed.

Points to be observed.—The gun to be correctly loaded; all loading motions to be quite distinct and correct, and to be carried out without any slurring.

Standard time: 5 seconds.

iii. To unload the gun on the command "Unload".

Points to be observed.—Gun unloaded, tangent sight lowered, unloading motions to be distinct, belt withdrawn and repacked carefully in the box with lid closed; lock spring released.

Standard time: 5 seconds.

iv. To dismount the gun on the command "Dismount gun".

The gun will be dismounted on the spot.

Points to be observed.—All the points as when "All correct" is reported before mounting gun.

Standard time: 25 seconds.

v. To bring the gun into action on the command "Action".

This test combines i and ii. It should not be applied until proficiency has been attained in each of those tests.

Points to be observed.—All points as laid down for tests i and ii.

Standard time: 35 seconds. The time will be taken from the command "Action".

vi. To adjust the sights and lay the gun on the command "(Range) —(Target).—Lay".

Gun loaded and ready to be laid. Three service targets will first be pointed out, but the No. 1 being tested will not be informed of the order in which they are to be given out. A different range will be ordered for each target.

Points to be observed.—That the slide is adjusted and the gun laid with absolute accuracy.

Standard time: 12 seconds for each target.

The time will be taken from the range being ordered until No. 2 holds up his hand, indicating that No. 1 is ready to open fire.

All three targets to be engaged, and all to be correct.

vii. Horizontal traversing. On the command "Fire", e.g. "450 —Horizontal row—From left bull's-eye—To right bull's-eye—Traversing—Lay—Fire".

The target will be as for the Annual Range Course, Part I, placed at 25 yards from the gun. The gun will be laid on any bull's-eye that may be ordered. The tangent sight will be raised, but the firer must keep his eyes directed at the target during the traverse. The tests will comprise traversing from RIGHT to LEFT, as well as from LEFT to RIGHT. When the gun is laid, the aim should be checked by the officer conducting the test. On the command "Fire," No. 1 will fire a group at the bull's-eye named, then traverse, so that the next group will be fired at the next bull's-eye and so on. The test will not be completed until the space between nine bull's-eyes has been traversed. In order to ensure that the traversing is satisfactory throughout, the order to stop will be given at least once during the traverse, but not before five groups have been fired. The laying will be checked after each order to stop and when the limit of the traverse is reached.

Points to be observed.—That No. 1 tested his clamp before beginning the test; the object is to test if No. 1 has acquired the correct automatic tap. Tapping backwards to correct errors will not be allowed. By counting the number of taps, the correct point of aim can be calculated. At no check should the point of aim be more than one space out.

viii. Controlled corrections.

Three tests will be carried out. In each test the firer must pass within the standard given.

(a) Direct fire.

Gun loaded and laid on target.

Order to fire is given.

Order "Stop. All (or No.....), Up (or Down).....Go on."

Corrections exceeding 300 yards up or down will not be given.

Standard time: 6 seconds.

Points to be observed.—Sights correctly adjusted and gun relaid.

Time will be taken from correction being ordered till No. 1 presses thumbpiece to continue firing.

(b) Indirect fire.

Gun loaded and laid on aiming post.

Elevation checked by clinometer.

Order to fire is given.

Order "Stop. All (or No.), Up (or Down).....mins. Go on."

Corrections exceeding 45 minutes up or down will not be given.

Standard time: 6 seconds.

Points to be observed.—Correct alteration in elevation to be put on by wheel, within two minutes either way. Slide correctly adjusted.

Time will be taken as in (a) above.

ix. **Oblique traversing.** On the command "Fire", e.g. "450—Oblique row—Left bull's-eye—To right bull's-eye—Traversing—Lay—Fire".

The target will be as for the Annual Range Course, Part I, placed at 25 yards from the gun.

The procedure will be as for vii, but in this test manipulation of the elevating wheel is included and the firer is allowed to look along his sights. The tests will comprise traversing from RIGHT to LEFT, as well as from LEFT to RIGHT.

Points to be observed.—As in test vii.

x. **Immediate action.**

In this test the man will be required to rectify correctly each of four different stoppages within a reasonable time. The officer superintending the test must ensure that the immediate action is correctly performed without any unnecessary delay.

A target should be indicated to the whole detachment previous to the test. The crank handle should be covered with a cloth to conceal its position. On the removal of the cloth for covering the crank handle, the No. 1 will perform the immediate action.

NOTE.—Tests xi, xii and xiii, below, will be carried out by all 2nd-year machine-gunners. 1st-year machine-gunners will carry out these tests without time limits.

xi. **Bar foresight.**

(a) *Affixing the bar foresight.*

Gun mounted, man to be tested will kneel on right side of gun, carrying the bar foresight, with sliding foresight set at zero, in its case.

On the command "Prepare for indirect fire" the man to be tested will affix the bar foresight to the gun.

Standard time : 8 seconds.

N.B.—This should also be carried out in the dark, and the same standard should be reached.

(b) *Setting the foresight.*

The man to be tested will kneel by the barrel of the gun, hands to be clear of the bar foresight, which will be clamped on the gun with the foresight clamped at zero. The number of degrees and tens of minutes deflection R. or L. will be named.

Standard time : 6 seconds. For the test four deflections will be given. All should be correct.

xii. **Clinometer.**

Clinometer in its case and set at zero, rear cover open and gun approximately level. An order for elevation or depression of not more than 4° will be given. The order will always include minutes given in multiples of 5.

The man to be tested will adjust clinometer and lay the gun. No holding will be taken.

Clinometer will be left on the gun.

Standard time : 20 seconds.

xiii. **Use of dials.**

Gun mounted, laid on a zero post with direction dial at zero, and clamped. On the command "All Right (or Left).degreesminutes" (switch will not be less than 40°), the man to be tested will unclamp the gun, adjust the pointer and clamp.

Standard correct within 20 minutes.

Time : 5 seconds.

NOTE.—The following test will be carried out annually by the N.C.Os. of the platoon:—

xiv. **Director.**

Instrument on the director stand with the telescope screwed fully home, elevation and scales at zero, director sight set at zero but not clamped.

A clearly defined mark will be pointed out to the N.C.O. to be tested, within an arc of 45° on either side of the zero line.

On the order to commence, the N.C.O. will lay on the target and read out the angles of deflection from zero, and of elevation or depression.

Standard.—Three tests to be carried out. To pass, the reading must be within 10 minutes of deflection and 5 minutes of elevation or depression.

Time : 25 seconds.

xv. **Belt Filling.**

"A heap of 25 rounds of ball ammunition will be placed beside the man to be tested, and will be inserted correctly in a belt.

Standard time : 1 minute.

Points to be observed : Rounds to be placed in a heap and not arranged. Inspection of the belt on completion will show if it has been correctly filled."

SECTION XII.—SIGNALS.

1. In addition to the signals already taught in Infantry Training, 1937, Secs. 30-32, the following signals are necessary for fire control and use in the field by machine gun units.

2. They will be more easily remembered if, instead of being taught in one lesson, they are introduced when the relative stage of training is reached.

3. Fire control signals—

Signal	Interpretation	When taught
(1) No. 2 with his hand raised in line with and behind the shoulder of No. 1.	(2) Gun ready to fire.	(3) Whilst teaching adjusting the sights and laying the gun, E.G.D.

NOTE.—On the order wind, No. 2 will lower his hand. He will raise his hand again when No. 1 has made the necessary allowance.

Both arms fully extended, raised from the sides to a position level with the shoulders and lowered again. This motion is repeated quickly several times.	Action.	
Arm swung in a circular motion in front of the body.	Cease firing.	Before and during section drill, direct fire.
Fire controller with his hand raised above the shoulder.	Prepare to fire.	
Fire controller's hand lowered to the side.	Fire.	
Fire controller's arm waved horizontally to and fro.	Stop.	

NOTE.—No. 2 will order No. 1 to stop.

Fire controller—

Semaphore

U
N
T
L

Up 50 yards or 10'
Down 50 yards or 10'
Right 30'
Left 30'

During section drill, indirect.

4. Field signals—

A. Platoon 2nd in Comd.

or

Section comdrs.

or

Section cpls.

AA. All N. C. Os. to joint platoon comdr.

B. More ammunition required.

H. Trucks to come forward.

W. Water required.

to join
immediate
superior.

Before section
training.

During section
drill.

SECTION XIII.—ADVANCED MACHINE GUN HANDLING.

The object is to adapt the lessons taught in elementary gun drill as far as possible to service conditions.

This subject provides an essential link between drills and collective training, and should be taught to the men as soon as they are proficient in elementary gun drill. It should be practised again within each section at the beginning of the period allotted for section training.

LESSON 52.—MAN-HANDLING OF LOADS

Instructor's Note.

Stores :—

Gun, tripod, condenser, and tube, five belt boxes with belts, belt box carrier and dummy cartridges. Spare parts case: all to be at service weights.

1. Explain and demonstrate.—

The methods of carrying the gun, tripod, etc., taught in drills are not always the most convenient for carrying long distances, or when concealment from ground observation is necessary. Any comfortable method may be adopted, which does not damage the load, and which conceals from the enemy the nature of the load carried. The following methods are suggested :—

i. Tripod—

- (a) Walking or doubling.—Under the arm or in front of the body.
- (b) Crawling.—Any convenient method. The tripod may be dragged along the ground provided that the dial is not damaged.

ii. Gun—

- (a) Walking or doubling.—Across the body, barrel casing resting on the right forearm, left hand gripping the left traversing handle and free end of the condenser tube: or

Close to the right side with the muzzle pointing upwards. It will be held at the crosshead bracket with the right hand, the free end of the condenser tube may be pushed through the traversing handle.

- (b) Crawling.—The man will lie on his right side, head to the front, weight of the body supported on the right elbow right knee bent. He will support the gun with the barrel casing resting on the right forearm, the breech casing on the inside of the right thigh. He will grasp the left traversing handle with the left hand, which will also contain the free end of the condenser tube. He will crawl forward making use of his right elbow and left leg.

iii. Belt Boxes and condenser—

- (a) Walking or doubling.—One belt box under each arm, and one belt box or condenser can in one hand.
- (b) Crawling.—Any convenient method may be adopted. A suggested method is that the leather handles of a belt box may be hung over the toe of the man's boot. By this method the man can crawl on his side with two belt boxes, one on either foot and can hold the condenser in one hand.

iv. Two-man load—

NOTE.—The gun will be unloaded before the movement described below is carried out.

- (a) If it is required to move a gun and tripod, which have already been mounted, a short distance to a new position the whole may be carried by two men as follows :—

No. 1, right hand on the rear leg, left hand, containing one belt box, on the left front leg.

No. 2, left hand, containing one belt box, on the right front leg, condenser in the right hand.

- (b) The gun mounted on the tripod can be moved by two men crawling forward, each grasping a front leg.

2. Practise squad.

LESSON 53.—MOUNTING THE GUN ON EXPOSED GROUND

Instructor's Note

Stores :—

As for Lesson 52.

1. The instructor will explain to the men that the mounting taught to them during drills is not always the most suitable under service conditions owing to the necessity for concealment and the unevenness of the ground.

2. Explain and demonstrate :—

i. Mounting and dismounting the tripod.

To mount the tripod.—

No. 1 crawls forward with the tripod, placing it over the spot indicated. Keeping as low as possible on the left of the tripod with his head to the front, he loosens the jamming handles of the two front legs and opens them by rocking the tripod, first to one side and then to the other. He adjusts the rear leg so that when the tripod is mounted it will be at its minimum height.* He raises the tripod until the socket

* In obtaining the minimum height, it will be found with most tripods that a firm mounting cannot be obtained by closing the rear leg right up to the socket. It will usually be necessary to adjust the rear leg back one tooth from the socket.

is upright and clamps up the front legs. It may be more convenient when mounting the tripod to adjust each front leg separately, rocking the tripod as described above.

An alternative method of Mounting the Tripod.—

Before giving him the order "**Mount gun**", the No. 1 will be told to set the rear leg at an angle suitable for the selected gun position. In addition, the two front legs will be swung forward and upward and clamped in a suitable position over the rear leg.

To dismount the tripod.—

No. 1 will loosen the front and rear leg jamming handles, and adjust the rear leg to the sitting position. He will close the legs together and tighten up all jamming handles.

ii. Mounting and dismounting the gun and tripod.—

To mount gun.—

No. 1 removes the elevating and crosshead joint pins. No. 2 opens the sliding shutter and crawls forward with the gun, timing himself to arrive at the position when No. 1 has prepared the tripod as described above. Together they will mount the gun on the tripod (See Plate 1). No. 1 will drive in the crosshead joint pin and turn the handle down, he will then swing round, keeping as low as possible and will lie with his legs to the front, right leg crossed over the left, his back and neck supported by No. 2. No. 2 will insert the elevating joint pin and then lie on his right side supporting No. 1 in the back with his right thigh and at the neck with his left knee (See Plate 2).

No. 3 will not disengage the quick release straps of the belt boxes, nor unscrew the cap of the condenser can. He will crawl forward only far enough to place his stores within reach of the No. 2, screening himself behind the Nos. 1 and 2 as much as possible. No. 2 will place the stores in their correct position, disengaging the quick release straps of the belt boxes, unscrewing the cap of the condenser, and inserting the tube.

To dismount the gun.—

No. 3 will crawl forward to a position in rear of the gun to take the belt boxes and condenser, which have been handed back by No. 2, who will first have fastened the quick release straps of belt boxes and the cap of the condenser. He will then crawl clear of the position.

Nos. 1 and 2 will then either:—

Crawl back, dragging the mounting, and dismount it under cover; or

PLATE I.
MOUNTING THE GUN

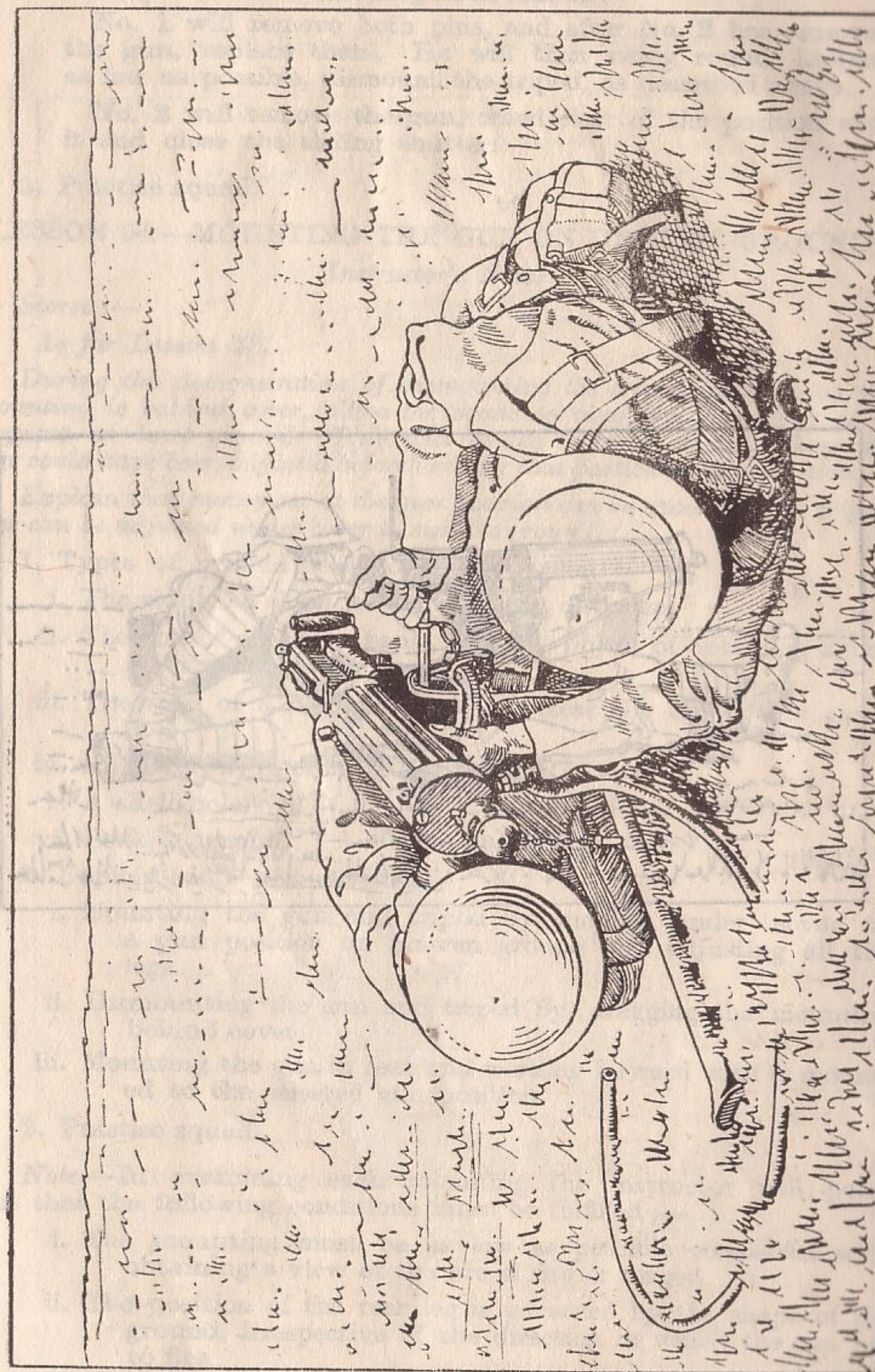


PLATE 2.

FIRING POSITION



They will dismount the gun as follows:—

No. 1 will remove both pins, and after No. 2 has removed the gun, replace them. He will then swing round, keeping as low as possible, dismount the tripod, as described above.

No. 2 will remove the gun, crawl clear of the position with it and close the sliding shutter.

3. Practise squad.

LESSON 54.—MOUNTING THE GUN ON UNEVEN GROUND

Instructor's Notes

Stores:—

As for Lesson 52.

During the demonstration of dismounting the tripod, as soon as the mounting is behind cover, allow the squad to view that mounting as it appears on level ground. This will enable them to visualize how the legs could have been adjusted beforehand for that particular gun position.

Explain that movement at the gun position can be avoided if the tripod legs can be adjusted under cover to suit the ground.

1. Types of ground selected should include:—

- i. The side of a slope for firing in any direction.
- ii. The top of a narrow bank, with the object of obtaining maximum command.
- iii. The side of a bank, in order to clear the top or fire along it.
- iv. A hedgerow, in order to fire through it.
- v. A shell hole.
- vi. Broken ground.

2. Explain and demonstrate.—

- i. Mounting the gun and tripod by moving under cover to a gun position on uneven ground and adjusting all the legs.
- ii. Dismounting the gun and tripod by dragging the mounting behind cover.
- iii. Mounting the gun in rear and working forward with it mounted to the selected gun position.

3. Practise squad.

Note.—In examining each mounting the instructor will point out that the following conditions must be fulfilled:—

- i. The mounting must be as low as possible consistent with obtaining a view of the arc of fire or target.
- ii. The position of the rear leg is governed by the shape of the ground, irrespective of the direction in which the gun has to fire.

PLATE 3.

GUN MOUNTED TO FIRE DOWN A SLOPE

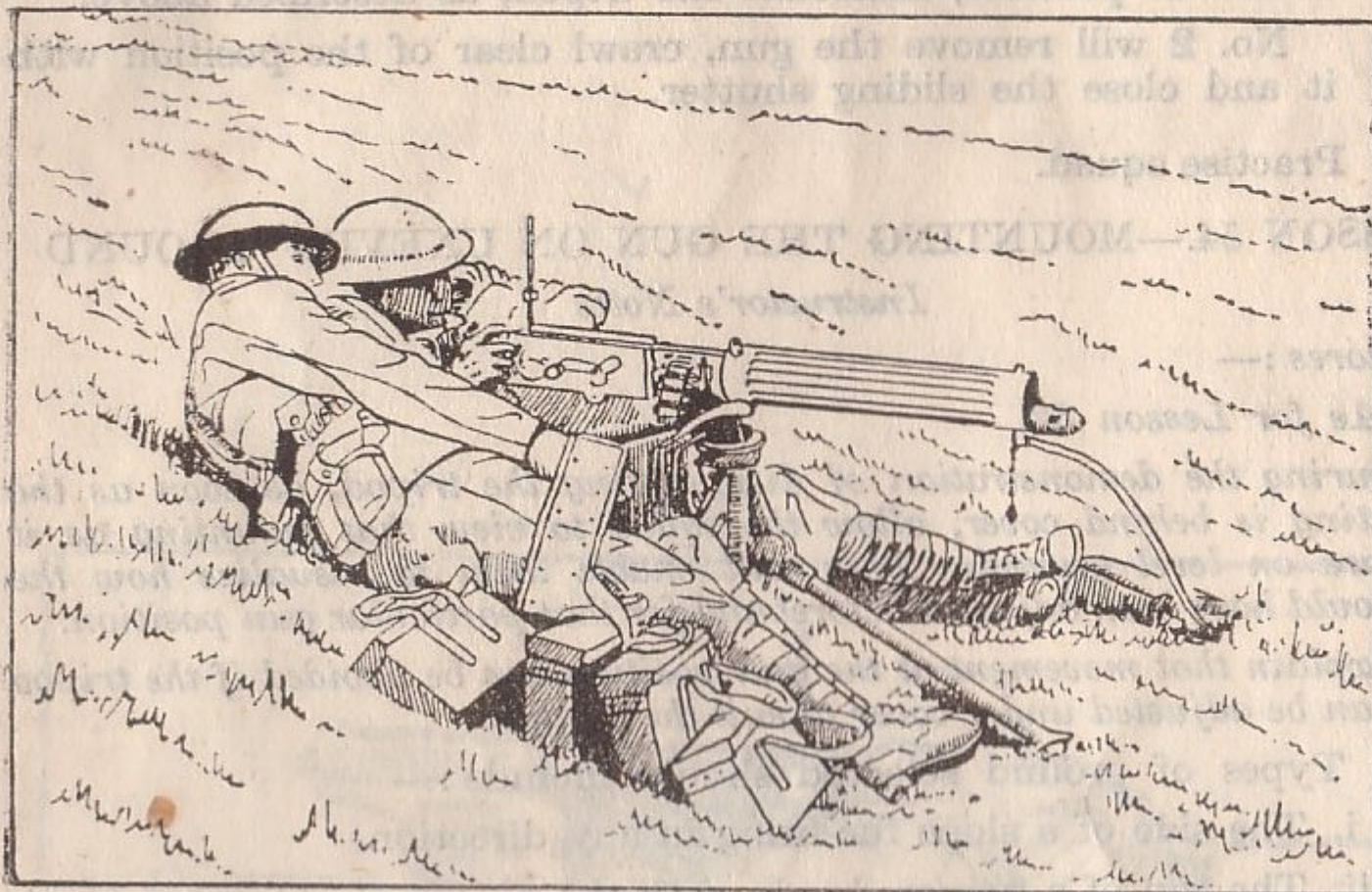
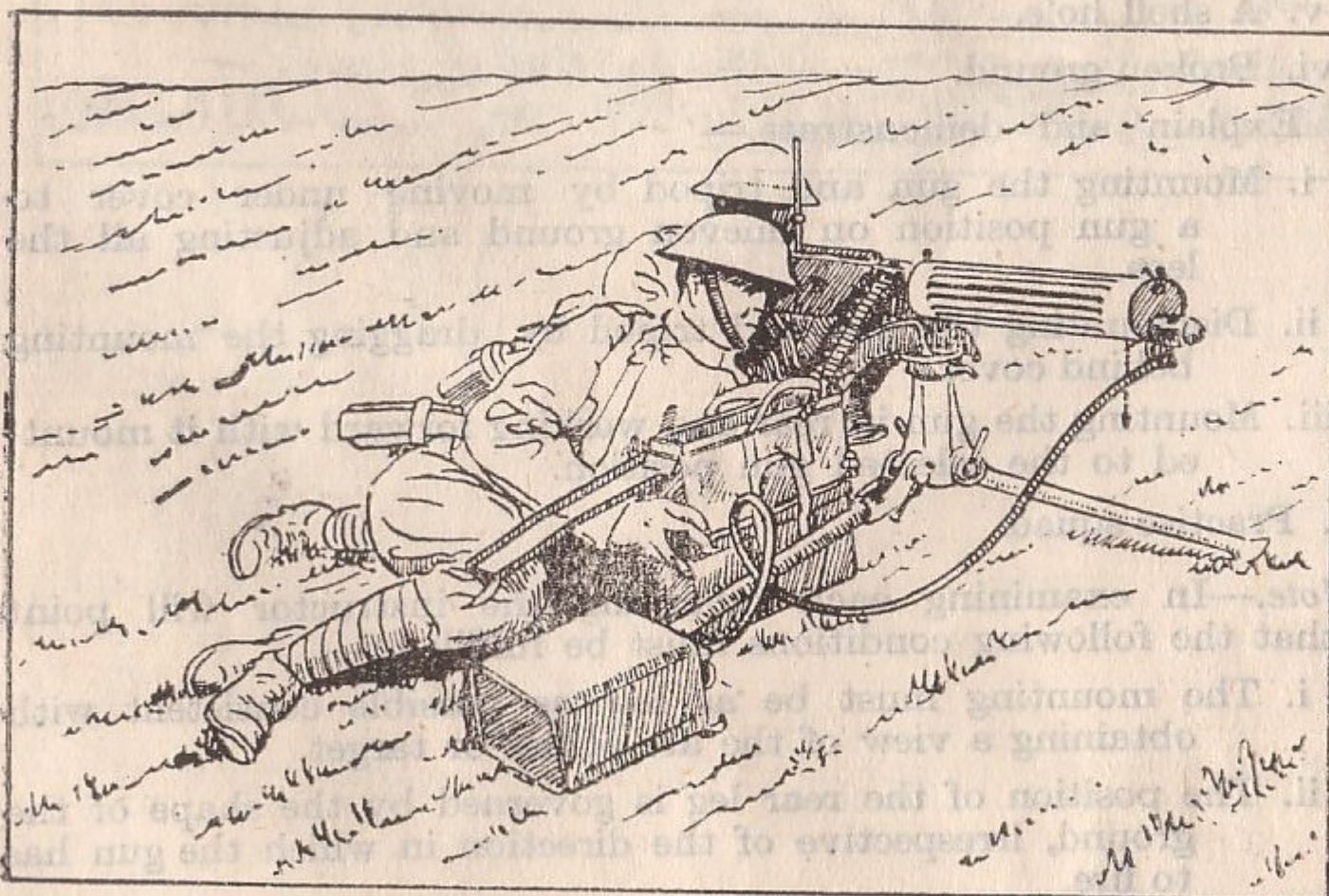


PLATE 4.

GUN MOUNTED ON THE SIDE OF A SLOPE.



- iii. The socket must be mounted upright, and over the spot indicated.
- iv. The shoes only, and not the legs must be bearing on the ground.
- v. The ground supporting each shoe must be sufficiently firm to ensure that the shoe does not slip during firing.
- vi. No part of the tripod must interfere with the elevating wheel.

LESSON 55.—BRINGING THE GUN INTO ACTION, AS PART OF A SECTION, MAKING USE OF COVER.

Instructor's Notes

Stores:—

*As for Lesson 52.**Equipment will be worn.*

Explain and demonstrate.—

- i. Explain that the object of this lesson is to practise bringing the gun into action with the minimum exposure to enemy observation and maximum cover from fire. The importance of this in training for war will be emphasized.
- ii. Describe briefly the methods by which a section commander may bring his guns into action (Sec. XVI).
- iii. Explain the necessity for good team work between:—
 - The section corporal in rear.
 - The gun numbers of the sub-section.
 - The section commander and his orderly in front.
- iv. Decide previously on:—
 - (a) A target and/or arc of fire.
 - (b) One gun position from which to engage it.
 - (c) Ground from which the enemy can observe.
 - (d) A point close behind the gun position to which the sub-section has been led under cover.
- v. Assemble the gun numbers, with their stores, at this point behind the gun position. Explain the situation regarding enemy observation, etc., and then order them into action using one of the methods in Sec. XVI, detailing a man to act as section orderly if necessary.
- vi. When the gun is in action, discuss the following:—
 - C (a) Ability of the gun to do its task.
 - D (a) Suitability of the mounting.
 - E (a) Position of the stores at the gun.
 - B (a) Position of No. 1 with regard to concealment and freedom of action.

- B2* (e) Position of No. 2 with regard to :—
- Concealment.
 - Observing signals from fire controller.
 - Attention to feed.
 - Assisting in immediate action.
- (f) Position of remaining numbers with regard to concealment and their duties in action.
- B3* (g) Method of mounting the gun without undue exposure.
- a* (h) The move forward of the gun numbers with regard to concealment and time.
- (i) Action of the section orderly (if used).
 - (j) How the gun position adopted could be improved by the use of camouflage or by digging.
- vii. In this lesson, practice will be given in fire discipline (direct fire), the maintenance of the gun in action, and in the complete duties in the occupation of a gun position from the position in readiness (including a long carry).

SECTION XIV.—VEHICLES.

LESSON 56.—LOADING TRUCKS (PROVISIONAL).

It is not the intention that there should be any rigidity in the distribution of loads and personnel to vehicles. This may be modified to suit varying conditions.

The drills and field duties described in this pamphlet are based on the distribution of loads and personnel shown in this Section.

Instructor's Notes.

Stores :—Four trucks, Complete stores of one Section and Platoon H. Q.

Lay out the stores in four groups as under :—

Group 1.—Platoon commander's truck.

„ 2.—Second in Command's truck.

„ 3.—Odd sub-section truck.

„ 4.—Even sub-section truck.

1. Explain :—

i. Platoon personnel are distributed as follows :—

Platoon headquarters.

Platoon commander's truck.—Platoon commander.
Driver.

Second in command's truck.—Platoon second in command.
Driver.

Motor cycles—Platoon orderly. { In Indian
Batman. Bns. two
orderlies.

Each section.

Odd sub-section truck.—Section commander.

4 Gun Numbers.

1 Range-taker.

Driver.

Even sub-section truck.—Section corporal.

4 Gun Numbers.

1 Orderly.

Driver.

2. Load each vehicle in turn (for details see Plates).

3. Practise squad.

PLATE

PLATOON COMMANDER'S TRUCK

(Top layer.)

PLATE

PLATOON COMMANDER'S TRUCK

(Bottom layer)

(To be issued later)

32

PLATE
SECOND IN COMMAND'S TRUCK
(Top layer)

(To be issued later)

33

PLATE
SECOND IN COMMAND'S TRUCK
(Bottom layer)

(To be issued later)

34

PLATE

SUB-SECTION TRUCK

(Odd sub-section, top layer)

(To be issued later)

35

PLATE

SUB-SECTION TRUCK

(Odd sub-section, bottom layer)

(To be issued later)

PLATE

SUB-SECTION TRUCK

(Even sub-section, top layer)

(To be issued later)

(To be issued later)

PLATE

SUB-SECTION TRUCK

(Even sub-section, bottom layer)

Owing, however, to the fact that support platoon guns are fired at ranges up to 2,500 yards, and to the close grouping of the gun, even minor inaccuracies in indication and recognition may result in the target being missed entirely.

Also it is often necessary to fire under conditions where the safety of our own troops has to be considered and any inaccuracy might endanger them.

For these reasons the methods taught in N. A. T. Vol. I Pamphlet No. 2 are amplified here.

The sequence and system of training—The following will be the sequence of individual instruction:

i. Officers and N. C. Os—Visual training.

The organization of the gun, including the use of range cards.

Indication.

Trailing distance up to 2,000 yards with aid of key ranges.

Use of the pointer staff.

ii. Gun numbers.

Visual training.

Trailing distance up to 1,000 yards.

Recognition.

Application of fire orders.

Use of the pointer staff.

iii. The range-takers and orderlies will require instruction in visual training and elementary indication and recognition on the same lines as for officers and N. C. Os.

2. Individual instruction of officers and N. C. Os—

i. Visual training—Attention should be called to those features which are of particular interest, e.g. positions for observation to the front and to the flanks, positions that offer a good field of fire, areas on which observation of fire is likely to be obtained, localities from which enemy attacks may develop, the visibility of sky-lines, etc. By such practice a necessary introduction will be obtained to the more detailed study of cover, reconnaissance and the selection of gun positions.

Practical in the use of these should be combined with the above.

SECTION XV.—VISUAL TRAINING

1. The methods taught in S. A. T., Vol. I, Pamphlet No. 2, 1937, Lessons 1 to 10, must be the groundwork of the visual training for the support platoon.

Owing, however, to the fact that support platoon guns are fired at ranges up to 2,800 yards, and to the close grouping of the gun, even minor inaccuracies in indication and recognition may result in the target being missed altogether.

Also it is often necessary to fire under conditions where the safety of our own troops has to be considered and any inaccuracy might endanger them.

For these reasons the methods taught in S. A. T., Vol. I, Pamphlet No. 2 are amplified here.

2. **Sequence and system of training.**—The following will be the sequence of individual instruction:—

i. Officers and N. C. Os.—

Visual training.

The organization of the arc, including the use of range cards.

Indication.

Fire orders.

Judging distance up to 2,000 yards with aid of key ranges.

Use of the pointer staff.

ii. Gun numbers.

Visual training.

Judging distance up to 1,000 yards.

Recognition.

Application of fire orders.

Use of the pointer staff.

iii. The range-takers and orderlies will require instruction in visual training and elementary indication and recognition on the same lines as for officers and N. C. Os.

3. Individual instruction of officers and N. C. Os.—

i. Visual training.—Attention should be called to those features which are of particular interest, *e.g.*, positions for observation to the front and to the flanks, positions that offer a good field of fire, areas on which observation of fire is likely to be obtained, localities from which enemy attacks may develop, the visibility of sky-lines, etc., By such practice a necessary introduction will be obtained to the more detailed study of cover, reconnaissance and the selection of gun positions.

Practice in the use of glasses should be combined with the above.

ii. The organization of the arc and use of range cards.—Instruction should be given having regard to a tactical situation. Particular attention should be paid to the choice of reference points, to the orders to be given to the range-taker and to estimating ranges from the key ranges on a range card.

iii. Indication.—The sequence of instruction will be as laid down in S. A. T., Vol. I, Pamphlet No. 2, the instructional stores and technical methods involved being adapted to support platoon requirements. For example, directors will be used instead of aiming rests.

iv. Fire orders.—As soon as a satisfactory standard of indication has been reached officers and N. C. Os. will be practised in giving out fire orders for various targets. Landscape targets may be used in the preliminary stages. Examples of direct fire orders will be found in Part III.

During the later stages of training the time taken to give out the fire order will be noted, and when necessary, it will be pointed out where time could be saved. This will be of particular importance in the engagement of moving targets.

The detail of fire discipline in connection with fire orders is practised in Section drill—Direct fire (Sec. XVI, Lesson 63).

4. Individual instruction of gun numbers.—

i. Visual training.—As in S. A. T., Vol. I, Pamphlet No. 2, extended to suit support platoon requirements.

ii. Judging distance up to 1,000 yards.—The men will be taught to judge distances up to 1,000 yards. The method and sequence of instruction will be as laid down in S. A. T., Vol. I, Pamphlet No. 2.

iii. Recognition.—Instruction in recognition must only be given by N. C. Os. who have reached a high standard in indication.

The sequence of instruction will be as laid down in S. A. T., Vol. I, Pamphlet No. 2, landscape targets or the miniature range being used in the preliminary stages.

During this instruction the Nos. 1 will be at the guns, and on the conclusion of the indication will be ordered to lay on the point of aim indicated. The instructor will check the point of aim. Not more than four guns should be used at one time by one instructor.

iv. Fire orders.—As soon as a satisfactory standard of recognition has been reached, the men will be practised individually in the detail of applying fire orders to the gun.

JUDGING DISTANCE TEST

Personnel of support platoons will carry out two tests annually.

The instructions for the conduct of tests contained in S. A. T., Vol. I, Pamphlet No. 2, will in general be followed with certain modifications as under:—

i. *Objects*.—All objects will be natural, or where it is impossible, artificial targets such as camouflage screens, etc., may be substituted.

ii. *Distances*:—

(a) Gun numbers will judge on two objects both under 1,000 yards, and not nearer than 600 yards. Also will estimate one range to an object not more than 1,000 yards away and a reasonable distance from a known range.

(b) Officers, N. C. Os., and selected privates, will carry out the test for gun numbers and in addition will estimate the ranges to two objects not further than 2,000 yards away and within a reasonable distance of two known ranges.

iii. *Standards of efficiency*:—

(a) For judging as in Pamphlet No. 2.

For estimating.—

Up to 1,500 yards permissible error 50 yards.

From 1,500 to 2,000 yards permissible error 100 yards.

NOTE.—Known ranges from which estimations are required will be given to the nearest yard.

The ranges to objects which are to be estimated will be noted to the nearest 50 yards below or above. Those being tested will be given the benefit in assessing their standard of efficiency, e.g., a range of 1387 will be considered as 1350 or 1400 and ranges given as 1300 and 1450 accepted as passing.

(b) In order to pass, gun numbers must be correct within permissible error in two of the ranges; officers, N. C. Os. and selected privates in four ranges.

(c) Personnel who are tested will either “qualify” or “fail”. To “qualify” it will be necessary to pass both tests. An individual who does not attend any test will be graded as “not exercised”.

LESSON 57.—INDICATION AND RECOGNITION (WITHOUT AIDS)

Instructor's Note

Stores:—Gun, tripod, pointer staff, director. Landscape targets can be used, but every opportunity should be taken of practising on the ground.

1. *The arc of fire*.—Explain that the area of ground to be watched and within which targets will be engaged, is known as the arc of fire.

The arc is bounded by the “right of arc” and “left of arc,” each limit being an imaginary line passing through the gun position and some easily described point on the landscape in the direction required. Similarly, an imaginary line, known as the “near limit of arc,” can be described from right to left across the area to indicate that only the ground beyond this line and within the limits mentioned above need be considered.

2. Demonstrate how, whenever possible, the gun itself will be laid on to the point to be recognized. This is the simplest and most direct method of indication.

Explain how an instrument, for example a director, or pointer staff can also be used.

Explain that the approximate right, centre, or left of arc can be of great assistance to denote a general direction, viz:—

“Right of arc—White house.” “Centre of arc—Bright yellow patch.”

3. Practise the squad in indication (Officers and N. C. Os. only) and recognition by the above means, insisting on an accurate aim every time the gun is laid.

LESSON 58.—INDICATION AND RECOGNITION (WITH AIDS)

Instructor's Notes

Stores:—Gun, tripod, pointer staff, director, graticuled glasses, slide rule, degree scale painted on the wall.

Use a landscape target if necessary but preferably practise on the ground.

REFERENCE POINTS

1. Explain that:—

i. Reference points in an arc may be as far apart as 30 degrees.

In deciding on the number of reference points, the objects to be employed, and their distance apart and from the guns, the fire controller must consider the nature of the arc of fire and his task. As a general rule as few as possible should be used so as to avoid confusion.

ii. They should be in the areas where targets may be expected to appear. When the enemy is tied to definite lines of approach, or moving targets are likely, it may be necessary to choose a few reference points close together to facilitate rapid switching.

iii. The points originally used for describing the right or left of arc should not be employed as reference points unless specially named as such.

2. Practise (Officers and N. C. Os. only) in the selection of reference points in accordance with the above considerations.

DEGREE MEASUREMENT

3. The squad must first know their own hand angles (S. A. T., Vol. I, Pamphlet No. 2, 1937, Lesson 6).

4. Explain that:—

When it is necessary to give out angles the following form will be followed:—

4° 35'—Four degrees three five minutes.

12° 5'—One two degrees five minutes.

10° 20'—One owe degrees two owe minutes.*

The words "right" or "left" or "elevation" or "depression" will precede the number of degrees or minutes, when required.

i. Fire controllers should measure horizontal and vertical angles by means of the graticules in their field glasses or slide rule. If for any reason it is necessary for them to use hand angles, it should be remembered that they will normally be in the lying position. Therefore, when their individual hand angles are being determined, these should also be checked lying down.

ii. At the gun, degrees included in an indication will normally be measured by hand angles.

iii. If the target is difficult to indicate, the fire controller may order vertical and horizontal angles to be measured by means of the elevating gear or traversing arc or both.

The following methods may be employed:—

(a) *Using the elevating gear only.*—To be employed when there is a prominent mark directly in line with the target, but above or below it.

The section commander orders the range or ranges required to hit the target, and indicates the prominent mark for the guns to lay on.

He then gives the order "**Handwheel**" on which Nos. 1 lay on the mark named.

With his glasses or slide rule, the section commander measures the difference in angle of sight between the prominent mark and the target.

He orders Nos. 1 to elevate or depress the guns by means of the elevating gear through this amount.

The order will be given in the form "**Handwheel** **All—up (or down)** **deg.** **mins.**". He then describes the target. If No. 1 cannot recognise it he reports to the section commander who then orders "**Pick up gun aiming mark**".

(b) *Using the dials and elevating gear (if required).*—

To be employed when there is no mark directly in line with the target.

The section commander chooses a suitable mark as close to the target as possible.

*In all examples this form of phonetic spelling is used to represent the figure "0."

He measures with graticules the horizontal angular amount the target is right or left of the mark, and the vertical amount the target is above or below the horizontal line through the mark.

He gives out the range or ranges to hit the target, indicates the mark and orders "**DIALS**".

Nos. 1 adjust their sights to the range and lay on the mark.

The section commander orders:—

"**All—right (or left)** **deg.** **mins.**".

"**All—up (or down)** **deg.** **mins.**".

The guns are moved through the angles ordered by the use of the dial and elevating gear respectively.

The section commander then orders an actual point of aim, e.g., "**patch of brown grass.**"

Procedure is then as in (a) above.

5. The class will practise, officers and N. C. Os. indicating targets by the methods in para. 4 above; the men will only practise recognition by these means, and laying the gun as ordered.

Combination of vertical clock ray and finger or degree measurements will also be practised. (See S. A. T., Vol. I, Pamphlet No. 2, 1937, Lesson 6).

6. Explain that:—

i. The indication of the ends of a target with width requires particular attention.

ii. The insertion of the word "**from**" before the description of one end of the target and "**to**" before the description of the other, will normally suffice to indicate the limits of the targets.

Example:—

"**Centre of arc—bush—from bush to right—five o'clock—three degrees—tree.**"

If the indication is difficult, this may not always be possible, and the words "**from**" and "**to**" would have to be used in the following example:—

"**Centre of arc—house—left, 9 o'clock small bush—left 9 o'clock gap in hedgerow—left 7 o'clock two degrees—faint dark mark—from bush to mark.**"

In such an indication, to avoid misunderstanding, the words "**right limit**" and "**left limit**" may be used to indicate the flanks. The above example would then be:—

"**Centre of arc—house—left, 9 o'clock—small bush—right limit—left—9 o'clock—gap in hedgerow—left 7 o'clock, two degrees, faint dark mark—left limit.**"

7. The class will practise as in para. 5 above.

LESSON 59.—DIRECT FIRE ORDERS FOR GUN NUMBERS

Instructor's Note

Stores :—Two guns, tripods, belt boxes, dummy cartridges, and, if no open country is available, landscape target. Field glasses and slide rule.

1. Explain and demonstrate :—

- Point of aim, according to method of fire.
- Overlap at ends of target and of beaten zones in the case of targets with depth.
- Wind allowance and its effect on the point of aim before and during firing.
- Length of bursts, according to the range.
- Rate of fire.
- Action of No. 1 on the command "stop".

2. Take examples of all types of targets, including moving targets, using various methods of indication.

SECTION XVI.—SECTION DRILL.—DIRECT FIRE

Instructor's Notes

Stores :—For all periods of section drill, the following stores are required :—

Two guns complete in chests, 10 belt boxes, two belt box carriers, two condensers and tubes, two tripods, dummy cartridges. The Nos. 2 will always wear the clinometer and bar foresight.

When additional stores are required a note to that effect will be found under the heading of each lesson.

1. As proficiency is attained the drill will be practised introducing cover. The direction of enemy observation will be indicated.

2. Before the drill begins the instructor will fall the section in, detail a section commander, section corporal and gun nos. In addition he will inform the section corporal where the trucks are to be sent when the required stores have been removed and reported correct (For drill purposes this need only be a short distance in rear). He then gives the order "MOUNT" and all ranks will take up their positions in the trucks as shown by diagram.

3. POSITION OF PERSONNEL IN TRUCKS :—

SEC. CPL.		DVR.	SEC. COMDR.		DVR.
No. 4		No. 3	No. 4		No. 3
No. 1		No. 2	No. 1		No. 2

NOTE.—For drill purposes trucks should not be less than 20 yards apart.

4. The range-taker and orderly are not required during the early stages of these drills, and should be practised in the duties of gun numbers. In later stages, the drill for the reconnaissance and occupation of gun positions should be practised, when the range-taker and orderly will carry out their normal duties.

LESSON 60.—PREPARE FOR ACTION AND COME INTO ACTION

Instructor's Note

Additional Stores—Two section trucks

Section Corporal.—(Having dismounted) Orders "PREPARE FOR ACTION" and supervises the "prepare for action".

Drivers.—

- (i) Lower tail boards.
- (ii) Assist Nos. 2 to place gun chests on ground and open lids.
- (iii) Replace gun chests, fasten the tail boards and await orders from the section corporal.

Nos. 1.—

- (i) Remove tripods.
- (ii) Move forward with tripods to a position indicated by the section corporal.

Nos. 2.—

- (i) Assisted by drivers, remove gun chests.
- (ii) Place strap of spare parts case on their right shoulders.
- (iii) Remove guns from chests and affix condenser tube.
- (iv) Move forward with guns to a suitable position, a few paces to the right of Nos. 1.

Nos. 3.—

- (i) Each will take out 1 condenser, 1 belt box and 1 belt box carrier.
- (ii) Move forward to a position a few paces in rear of the Nos. 1 and 2.

Nos. 4.—

- (i) Take out 2 belt boxes each.
- (ii) Move forward to a position a few paces in rear of Nos. 3.

Sec. Cpl.—

- (i) Takes 2 belt boxes from his own truck.
- (ii) Moves forward to a position in front of the trucks.

Sec. orderly. (if available)—

- (i) Takes 2 belt boxes from the odd sub-section truck.
- (ii) Moves forward and joins the Sec. Cpl.
- (iii) When the Section Commander orders "action" leaves two belt boxes with the Sec. Cpl. and rejoins the Sec. Comdr.

Gun numbers will inspect their stores as taught in Elementary Gun drill and will report as follows:—

- "Nos. 4. Ammunition correct."
- "Nos. 3. Ammunition and condenser correct."
- "Nos. 2. Gun and Ammunition correct."
- "Nos. 1. No..... Gun, all correct."

As soon as stores have been inspected and reported correct section corporal will dispose of the trucks as ordered, warning the drivers where to return to when signalled for. He will then move to a suitable position and lie down.

NOTE.—(1) For drill purposes the Nos. 1 will move forward about 25 yards from the trucks and sub-sections should be 15·20 paces apart.

(2) If the amount of ammunition at the gun position is not specified 4 or 5 belts per gun (5 belts if the section orderly is available) will be taken off the trucks as shown in the detail of these drills. If more ammunition is required the section corporal will include this in his order, thus:—"X BELTS PREPARE FOR ACTION," and will give orders to the Nos. 4 to bring forward the remaining belts.

ACTION

The section commander will indicate where the guns are to be mounted and the general direction in which they will point.

SECTION COMMANDER—"ACTION".

Nos. 1 and 2 will move with the guns and tripods and place them down in the position indicated.

Nos. 1 assisted by Nos. 2 will mount the guns and tripods in accordance with detail for action in Elementary Gun Drill.

Nos. 3 will move forward, and place the belt box and condenser (and the belt box carriers if required by No. 1) in a convenient position beside Nos. 2).

Nos. 4 will move forward and place their two belt boxes at Nos. 3's position.

Nos. 3 will take forward to the guns, the two belt Boxes from Nos. 4. At the same time the Nos. 4 will collect Belt Boxes from the section corporal and return again to Nos. 3's position.

Nos. 3 will return to their original position.

Nos. 4 will return to their original position taking the Belt Box Carrier with them, if brought back by the Nos. 3.

SECTION CORPORAL.—

As soon as the guns are in action, he will place Nos. 3 and 4 as necessary, himself taking up a position where he can best supervise the ammunition supply and the work behind the guns. For drill purposes this position will be in rear between the two Nos. 4.

Section Commander.—Will normally control the fire of his section from a position on the left of No. 2 Gun.

NOTE.—If the Nos. 4 have brought back the Belt Box carriers they will be returned to the truck as soon as possible.

LESSON 61.—CEASE FIRING AND ON TRUCKS

Stores as for Lesson—60.

Section Commander.—Signals for trucks. When the section corporal acknowledges, section commander orders “cease firing”.

Section commander.—“Cease firing.”

Drivers.—

(i) Drive their trucks to the positions previously ordered and lower tail boards.

(ii) Place gun chests on ground on and open lids.

Nos. 1 and 2 will cease firing as in Elementary Gun Drill.

Nos. 3 will move forward, collect all belt boxes, condenser (and belt box carrier if in use), left at the gun position (first bringing in the aiming post if in use), and return to a position a few paces in rear of Nos. 1 and 2.

Nos. 4 will move forward, and collect 1 Belt box from the Nos. 3 and then return to the Nos. 3's original position.

Section Commander.—“ON TRUCKS”.

Nos. 1 replace tripods in the trucks.

Nos. 2. (i) Return to trucks.

(ii) Replace guns, condenser tube and spare parts case, and, assisted by Drivers, put gun chests on truck.

Nos. 3 and 4. Return their stores to the truck.

Driver.—Assisted by Nos. 2 replace gun chests, and when all numbers are on trucks, fasten the tail boards.

LESSON 62.—LONG CARRY.

Instructor's Notes

Additional stores:—

Extra belt boxes.

When the gun position is an appreciable distance from the position in readiness the section corporal will detail loads evenly throughout the section. No. 4 returning for any belt boxes which cannot be carried in the first journey. At the end of the carry all belt boxes will be placed with Nos. 3.

LESSON 63.—FIRE DISCIPLINE

Instructor's Notes

Additional stores:—

Landscape target, if necessary.

Before carrying out this stage of the drill the man must have had sufficient instruction in receiving fire orders.

The instructor will detail an arc of fire and reference points. When a satisfactory standard has been reached, the section should be exercised with the fire controller on the right of or between guns.

Practice of fire orders in all forms, including the allowance for side wind, is an essential part of this drill, particular attention being paid to all points of fire discipline.

LESSON 64.—THE REPLACEMENT OF BREAKAGES

Instructor's Notes

Additional stores:—

Spare parts box.

1. Where the spare required is carried in the spare parts case.

No. 2 replaces the broken part from the spare parts case. If the lock is broken and is repairable he will hand it with the wallet to No. 3.

No. 3 will carry out the necessary repair and return the lock and wallet to No. 2 at the first opportunity. In all cases the broken part will be retained.

2. Where the spare part required is not in the spare parts case.

The part is called for. No. 4 takes it from the truck and passes it forward through No. 3 to No. 2. The broken part is returned to the truck.

NOTE.—The section corporal is responsible that broken parts are replaced immediately the situation allows.

LESSON 65.—TO CONTINUE FIRING IN THE EVENT OF THE TARGET BECOMING OBSCURED

Instructor's Note

Additional stores:—Aiming posts, bar fore-sights.

1. When the target is likely to become obscured for a short time only:—

Section Commander.—“Pick up gun aiming marks.”

Nos. 1 pick up gun aiming marks.

Nos. 2 set the direction dial at zero. Look over the sights and memorise the aiming mark, its position and the setting of the tangent sight slide.

2. When the target is likely to be obscured for some time, the section commander orders gun aiming marks to be picked up as above.

He then orders—

“Indirect fire equipment.”

This order is passed back to the trucks. Aiming posts are then removed from the trucks and passed up the chain of supply to the Nos. 3.

At the first opportunity the section commander orders—

“Check elevation”.

Nos. 1 raise the rear cover.

Nos. 2 place the clinometer on the gun, level the bubble and note the reading.

Section Commander.—“Unload—Clear guns”.

Nos. 1 act as in E. G. D.

Section Commander.—“Out aiming posts.”

Nos. 1 close the rear cover.

Nos. 2 affix the Bar foresight.

Nos. 1 slide the Tangent sight slide to 2500.

Nos. 3 double forward—order No's. 1 “Head aside” and notice where the line of sight cuts the ground. They then double forward and plant the aiming Post directed by No's 1, either by signal or verbally. When so ordered they double back to their previous position.

Section Commander.—“Load” —“Fire”.

NOTE.—Corrections in elevation will now be given in degrees and minutes.

LESSON 66.—DRILL FOR THE OCCUPATION OF GUN POSITIONS

TO TEACH VARIOUS METHODS OPEN TO SECTION COMMANDER OF BRINGING THE GUNS INTO ACTION

Instructor's Note

1. *Stores required* :—Complete section with its transport.

2. *The drill commences when the section has just arrived in a position in readiness. The section commander will order amount of ammunition required at the gun position, and where the transport is to be sent when unloaded. For drill purposes these positions need not be far distant.*

1. The section commander will move off with his range-taker and orderly to reconnoitre a (previously selected) section position.

2. Section corporal will order **“prepare for action”**.

3. Section commander, on arrival at section position, will give orders to the range-taker :—

1st Target and/or Arc of Fire.

Objects to which ranges are required. He indicates the approximate position of the control post.

(The range-taker will move off and carry out his duties.)

4. The section commander will then select a position for each gun and order them into action by one of the following methods :—

(a) Go back and bring forward Nos. 1 with guns as far as cover allows and point out gun positions, first target, arc of fire and reference points.

(b) Signal the guns up in turn, pointing out to each No. 1 as he arrives the gun position, first target, arc of fire and reference points.

(c) Use the section orderly, when available, to mark one gun position while he himself marks the other one, the guns being ordered or signalled into action independently.

NOTE.—The amount of information given to the Nos. 1 in each case must depend on circumstances, e.g., if the first target is to be engaged immediately, the arc of fire need not be given in the first instance but when opportunity occurs during a lull in firing. In some cases the arc of fire may be given to both Nos. 1 together, after the guns are in action.

SECTION XVII.—SECTION DRILL—INDIRECT

Instructor's Notes

1. *Signals.*—The required signals must be taught before proceeding with section drill, indirect (see Section XII).
2. *As proficiency is attained, the drill will be practised making use of cover as in section drill direct fire.*
3. *Stores required.* As for section drill, direct fire, plus indirect fire equipment.
4. *Before the drill begins the instructor will detail off sections as in section drill direct fire. Before the order "Mount" the instructor will inform the section corporal where the transport is to be sent when the required stores have been removed and reported correct (For drill purposes this need only be a short distance in rear).*

LESSON 67.—PREPARE FOR ACTION

On the order "**Mount**" the section will take up their positions as in section drill direct fire.

Section corporal.—"For indirect fire—prepare for action".

The section corporal will supervise the "prepare for action".

The action of the section will be as in section drill direct fire.

In addition to their previous duties, Nos. 3 remove the aiming posts.

Section orderly with the director stand and the range-taker with his instrument will move forward and report to the section commander, who will dispose them as necessary. When the stores have been removed from the transport and have been inspected and reported correct, the section corporal will :—

1. Send the transport to the position ordered.
2. Move forward and report to the section commander when signalled for.

LESSON 68.—TO COME INTO ACTION AND CEASE FIRING

Instructor's Notes

The section commander will call up the section corporal and give him orders as to :—

1. *Gun positions.*
2. *Method to be employed.*
3. *Pivot gun, and (crest method only) target.*

The section corporal will double back to the section and will tell the Nos. 1 :—

1. *Method to be employed.*
2. *Pivot Gun.*
3. *Mount your guns there and there. (indicating gun positions).*
4. *Move.*

On this command the actions of the gun numbers will be as follows :—

Nos. 1 will double forward, mount the tripod on the position ordered and stamp in the shoes before sitting down. (NOTE.—For modification of this action in the case of the Pivot Gun in the Peg Method, see lesson 70 below).

Nos. 2, having mounted the gun, will kneel up on their left knee on the right of the gun and affix the bar foresight.

Nos. 3 and 4 carry out their duties as in Section Drill—Direct Fire. For the remainder of the procedure, see lessons 69 and 70 below.

"Cease Firing".

On the command or signal "Cease Firing", the section corporal acknowledges the signal and then signals for the transport, if it has not already been called up.

The section will act as in Section Drill—Direct Fire.

NOTE.—The section corporal will acknowledge all verbal orders by raising his hand. He repeats orders when necessary, and keeps his hand raised if repetition is required.

LESSON 69.—THE CREST METHOD

In this case the section commander will give the following orders to the section corporal :—

1. *Gun positions.*
2. *Crest Method.*
3. *Pivot Gun and Target.*

The section corporal will double back to the section and will tell the Nos. 1 :—

1. *Crest Method.*
2. *Pivot Gun. No.....(Gun).*
3. *Mount your guns there and there. (Indicating gun positions.)*
4. *Move.*

As soon as the guns have been mounted, the section corporal will go to a position not more than 25 yards behind the Pivot Gun and order :—"Head Aside". Then, holding his slide rule to give him the line over the sights, he will order :—"Tap right (or left)".

No. 1 will tap in regulation taps in the direction ordered. When the gun is aligned on to its correct line, the section corporal will order:—"stop". He will then again order:—"Tap right (or left)" as required, if necessary, to bring the gun exactly on its line. On this order, the No. 1 will tap one tap at a time, as ordered. When the gun is correctly aligned on to the target, the section corporal will order:—"Position." He will then go up to the Pivot Gun and order:—"No..... Gun. Dial 180°. Lay on No..... (gun) No..... (gun) lay on No..... (gun). Dial. Zero."

Each gun will be laid on to the centre of the socket of the other gun.

The section corporal will then read off the angle on the dial of the Pivot Gun and give the following orders:—

"Zero Lines. No..... (gun) Right (or left)..... degrees..... Minutes."

On this order, the gun named will swing through the angle ordered and zero the dial.

The Pivot Gun will then swing back to 180° and zero its dial.

The section corporal will report to the section commander:—

"Guns laid on parallel lines."

Section Commander.—"Elevation—No. 1..... No. 2 (or all)..... degrees..... minutes."

The elevation is put on by means of the clinometer.

The drill for checking crest clearance is now carried out as follows:—

If the crest is a near one, no orders are issued, but Nos. 1 carry out the check automatically by raising the tangent sight slide to 400 and seeing whether the line of sight clears the crest.

It should be noted that although the section corporal gives no executive order, he is responsible for seeing that the Nos. 1 carry out the check.

Should any gun not clear the crest, the sequence in which it is reported is by the No. 1 concerned to the section corporal and thence to the section commander. In such a case the section commander should be able to change the position of this gun. Reports are only made when a gun is unable to clear the crest.

Section Commander.—"Out aiming posts (see lesson 65)."

Section corporal.—"Guns ready to load."

Section Commander.—"Load—Method of fire—Fire."

LESSON 70.—THE PEG METHOD

The section commander will align two or more pegs for the Pivot Gun, to indicate its correct line. He will then signal up the section corporal and give him the following order:—

1. Gun positions.

2. Peg Method.

3. Pivot Gun. No..... (gun).

The section corporal will double back to the section and will tell the Nos. 1:—

1. Peg Method.

2. Pivot Gun. No..... (gun).

3. Mount your guns there and here. (Indicating gun positions.)

4. Move.

The No. 1 of the Pivot Gun will mount his gun on the position indicated, and before stamping in the shoes, with the assistance of the No. 2 will align the gun on the pegs by moving the tripod right or left until the line of sight is in exact alignment with the pegs. When this alignment has been checked by the section corporal, the No. 1 will stamp in the shoes and recheck the alignment.

The section corporal will then order to the Pivot Gun.

"No..... (gun) Dial 180°. Lay on No..... (gun). No..... (gun) lay on No..... (gun) Dial. Zero."

The remainder of the procedure will be as in Lesson 69.

SECTION XVIII—SECTION DRILL—NIGHT FIRING

Instructor's Notes

Stores:—As for indirect fire plus night firing equipment, less aiming posts.

The method taught in this section pre-supposes that pegs have been placed on the required lines by daylight.

LESSON 71.—TO PREPARE FOR ACTION AND COME INTO ACTION

Section corporal.—“For night firing prepare for action.”

All duties are the same as for “for Indirect fire Prepare for action,” except that gun numbers will remain with their equipment in file in front of the transport.

The section corporal is responsible that all the necessary stores have been removed from the transport. He will then detail loads and move the section forward to a position in rear of the gun pegs.

To come into action

The section corporal reports to the section commander and is shown the gun peg of No. 1 gun, the direction for the tripod legs and the approximate position of the direction peg.

The section commander will now supervise the mounting of No. 2 gun, while the section corporal acts in a similar manner for No. 1 gun.

Section commander and section corporal.....
“No.....gun for night firing mount gun”

No. 1 moves forward with his tripod to a position pointed out to him by the section commander or section corporal a few feet in rear of the gun peg. He mounts his tripod removes the cross head, and with the assistance of the section commander or section corporal places the tripod so that the crosswires are directly above the peg. He stamps in the shoes, and after the section commander or section corporal has satisfied himself that the mounting is directly above the gun peg, No. 1 replaces the crosshead.

He calls up No. 2.

No. 2 mounts gun on tripod, fixes the bar foresight and the night firing sights.

LESSON 72.—TO OBTAIN DIRECTION AND ELEVATION

The section commander now goes out to each direction peg in turn and, shining his torch on the peg, orders :—“No.....direction”.

No. 1 aligns his gun on the peg.

The section corporal checks the line of each gun in turn, and when satisfied it is correct reports to the section commander :—“No.....correct.”

The section commander now returns to his position at No. 2 gun and the section corporal to No. 1 gun. The section commander then orders :—“Elevation.” “All (or No. 1....No. 2).....degreesminutes”

On this command Nos. 1 and 2 assisted by the section commander or section corporal, place the elevation on the gun by means of the clinometer.

Section commander then orders :—“Load”.

Method of fire.

“Wind” (if necessary).

“Fire”.

NOTE.—Direction and elevation must be periodically checked.

SECTION XIX—APPLICATION OF FIRE

1. General.

To obtain good results in war, with a minimum expenditure of ammunition, it is necessary so to apply the fire of the weapons concerned that the target is near the centre of their beaten zones. To attain this result the use of the range-finder will seldom be sufficient in itself, and it will often be necessary to make corrections—after fire has been opened—in both elevation and direction.

It is impossible to make such corrections unless the strike of the bullets, or their obvious effect on the enemy, can be observed.

Observation of fire therefore forms a very important part in the training of all support platoon personnel. It is to be noted that it is seldom possible to see the strike of bullets with the naked eye beyond 1,000 yards. With glasses or telescopic sights 2,000 yards may be possible.

The process of applying fire by observation and adjustment is known as "ranging". To obtain the advantage of the surprise element, which is always a possibility in war, the corrections ordered should be bold and rapid. Any attempt to creep on to the target by slow degrees, thereby giving time to the enemy, is to be deprecated.

2. Notes on observation of fire.

i. The possibility of observation of strike will depend on a variety of factors in addition to the distance of the observer from the target, of which the following are the most important:—

- (a) The nature of the soil round the target, Sand, plough and water generally give good results, but damp ground, long grass and undergrowth are bad.
- (b) Visibility as affected by light, mist or mirage.
- (c) The position of the sun. When low in the horizon strike is easier to pick up than when it is high.
- (d) Wind. A high wind tends to blow away the dust caused by the strike before it can be observed.

The action of the enemy will often be a clue as to whether fire effect is being obtained, e.g., cessation of hostile fire, etc.

In war, the fall of shell and the strike of bullets from other small arms near the target will interfere with accurate observation.

ii. It is a fundamental principle in observation of fire only to accept information which is definite or certain, and not to act on what is uncertain or no more than probable. Thus, before any deduction can be made as to the exact position of a beaten zone with reference to the target, it is necessary to decide whether the whole beaten zone is being observed or whether only a small portion of it is falling on ground which gives observation of strike, and if so, what portion of it.

Again, when a foreshortened view of the ground is obtained, it is possible to make errors of great magnitude if guesswork only is relied upon.

iii. In the engagement of targets with width or depth the beaten zones of the guns of the fire unit are distributed over the target according to the method of fire employed. Under these circumstances it is not always possible to determine that full fire effect has been obtained owing to the difficulty of checking each individual beaten zone.

iv. Tracer ammunition is only of value for determining correctness of line.

v. It must be remembered that it is necessary to observe the area in which the beaten zone is to fall, rather than the ground in the immediate vicinity of the definite aiming mark.

vi. It may occur that an area of ground adjacent to the target is specially suitable for observation. Under these circumstances it may be profitable to direct the fire on to this area in the first instance, correcting it on to the target as soon as observation has been obtained.

vii. Bursts of fire must be long enough to enable the beaten zone to be "found", as well as to produce the required fire effect on the target. (See Part III, Lesson 58).

LESSON 73.—OBSERVATION OF FIRE

Instructor's Notes

Stores:—Sand model (or miniature range).

Strips cut to scale to represent beaten zones.

The instruction will take the form of a lecture on the subject matter of Section XIX, illustrated on the sand Model with the aid of models of beaten zones.

The instruction should be completed in the open country indicating types of ground and their effect on the beaten zones, showing approximate dimensions and giving practice to officers and N. C. Os. in use of graticules and field glasses.

The instruction with the naked eye will be confined to ranges up to 1,000 yards.

Opportunity should be taken on all occasions when ball ammunition is used to practise officers, N. C. Os., range-takers and gun numbers in observing the strike of bullets.

LESSON 74.—OBSERVATION OF FIRE AND RANGING

Instructor's Note

Stores :—Gun, tripod, pointer staff, slide rule and field glasses and prepared range card.

1. Explain.

i. The general principles to be followed are :—

- (a) Only correct when it is certain that full fire effect is not being obtained.
- (b) When making corrections, unless the correction required can be determined accurately, **over-estimate** it rather than **under-estimate** it, always provided the safety of our own troops is not involved.

ii. Corrections for line.

Observation of fire is normally carried out from a position near the guns. In this case it is possible to measure the exact correction required, either with graduated glasses, slide rule, or hand angles.

iii. Correction for elevation.

- (a) It is not possible to determine the exact amount by which the beaten zone is falling over or short of the target.

The length of the beaten zone being known, if the whole of it is seen it will give a useful guide as to the amount of correction to give, *e.g.*, it might be estimated that the distance between the beaten zone and the target is either once or twice the beaten zone as seen on the ground.

- (b) It should be remembered that where a fore-shortened view of the ground is obtained, the tendency will be to underestimate the correction required.

As a rule, therefore, bold corrections should be given, particularly where there is no guide to the amount required.

The object is to include the target in a bracket rather than to creep towards it by inadequate corrections.

- iv. When fire is being observed from a flank, the fact that the bullets appear to be falling behind or in front of the target, as viewed from the observation post, will give definite indications as to whether a right or left correction is required.

Again, bullets which are falling on the correct line gun-target will appear from the observation post to be right or left of it.

In these circumstances, to ascertain the actual position of the bullets with reference to the target, it is necessary to visualize the line gun-target on the ground and judge accordingly.

2. Method of instruction.

i. Elevation.

- (a) Indicate a target to the firer and tell him to estimate the range.
- (b) Using his estimated range, give a fire order to bring fire to bear on this target.
- (c) Indicate the position on the ground where his bullets would fall, according to whether he has over or under-estimated the range.
If this position is very difficult to indicate, lay the gun on it.
- (d) The firer now judges the correction required, adjusts his sight accordingly, relays on the target and continues firing.
- (e) If he has not made a suitable correction, indicate where the bullets are now falling.
- (f) Continue as above until it is considered that he has brought fire to bear on the target.
- (g) The firer now reports the correct range to hit the target.

ii. Direction.

- (a) Give a fire order to engage any suitable target.
- (b) Indicate the supposed position of the shots right or left of the target.
- (c) The firer deflects his line of sight to the left or right of the target by the amount the shots fell right or left of it originally.
- (d) Check the line of sight. Inform the firer that the shots are hitting the target, or, if the firer is in error, indicate a fresh point of strike and continue as above until the suitable correction has been made.
- (e) The firer now reports his point of aim.

iii. Direction and elevation combined.

The firer will be required to obtain the correct elevation to hit the target, and to indicate a gun aiming mark which will give the necessary deflection right or left of it.

NOTE.—This lesson will be carried a stage further with officers N. C. Os. and selected men; the instructor will indicate the supposed position of the shots from a section and the fire controller under instruction will give the necessary correction to bring the fire on to the target.

SECTION XX—HEADQUARTERS TRAINING

1. The object of headquarters training is to train the personnel of section and platoon headquarters in their duties in the field by day and night under varying conditions and on different types of ground.

2. The training will be carried out with such personnel as are necessary for any particular exercise, selected from the following :—

Platoon headquarters.

1 Platoon commander.

1 Second in command.

1 Orderly.

1 Batman. } Indian Bns. two orderlies.

2 Truck drivers.

Each section.

1 Section commander.

1 Section corporal.

1 Orderly.

1 Range-taker.

2 Truck drivers.

3. The platoon commander can combine the command of his platoon with directing an exercise.

Gun numbers and guns are not required. Transport may or may not be taken out according to the exercise, at the discretion of the directing officer. The range-taker will invariably take his instrument when exercises are carried out on the ground. Platoon and section personnel taking part will be required to function correctly and issue the necessary orders based on the tactical situations as pictured by the directing officer.

4. As a preliminary to headquarters training exercises, commanders will be practised in the following :—

(i) Issue of orders.

(ii) Reconnaissance of section areas.

(iii) Procedure in occupation and evacuation of positions.

5. In the preparation of an exercise—

(i) Decide on main lessons to be taught.

(ii) Select suitable ground or prepare sand table.

(iii) Produce simple tactical situations which will bring out the lessons to be taught.

(iv) Make sure the orders issued are clear and in themselves a lesson in the issue of verbal orders.

6. In conducting the exercise—

(i) Assemble personnel taking part where the exercise starts.

(ii) Explain situations, issue any necessary orders. Personnel then act in accordance with the situation, and issue orders if necessary.

(iii) Criticise action and orders.

(iv) Issue subsequent situations, criticise action and orders at each stage.

(v) When necessary the directing officer will represent gun numbers for the purpose of receiving instructions.

SECTION XXI—FIELD DUTIES

INTRODUCTORY

1. In war the support platoon may be ordered to carry out part of a timed and organized fire plan, or it may be required to provide fire on the initiative of its own commander. In either case the battalion (or superior) commander will usually give orders to the support platoon in the form of a task. For instance :—

“Your task is to neutralize Red Farm from 10.00 hours to 10.15 hours”

“Your task is to cover the withdrawal of”

NOTE.—A support platoon may be grouped with other support platoons, for a particular operation, or may be placed in support, or under the command of a unit other than its own.

2. The support platoon commander may or may not have a general area allotted for his platoon. In either case his first two considerations, after receiving his orders, are :—

(a) To reconnoitre and select suitable areas for his sections.

(b) To get his platoon to a rendezvous from which it can occupy the area selected without delay.

NOTE.—(b) is usually accomplished while (a) is in progress, by using the orderly to take a warning order to the platoon second in command. This warning order will say where the platoon is to rendezvous, and where section commanders are to meet the platoon commander. It will save considerable time if section commanders can accompany the platoon commander on his reconnaissance from the outset, but this is not always possible.

3. In selecting section areas, the platoon commander will be influenced by the following considerations :—

(i) Areas chosen must admit of the effective performance of allotted fire tasks, at the same time ensuring the safety of our own troops.

NOTE.—The initial responsibility of indicating the positions and movements of our own troops lies with the platoon commander. The responsibility for subsequent safety lies with section commanders.

(ii) The necessity for adequate concealment of men and guns both from ground and air, and the need for sufficient lateral space to minimise the effect of shells or bombs. As a guide only, it is desirable to have 100 yards between sections if possible.

(iii) The necessity for covered approaches both to section areas and to observation and control posts.

(iv) The necessity for suitable observation and control posts, to facilitate observation, inter-communication and control. These should be inconspicuous and should give :—

An adequate view of enemy positions or line of approach, and of ground over which our own troops may move.

Concealment and space for the men concerned.

Mutual visibility where possible.

Control posts should give concealment for fire control signals and be within voice control of the guns.

(v) The necessity for covered and concealed positions for the transport.

4. Having completed his reconnaissance and made his plan the platoon commander will issue orders to his sections. These orders will follow the accepted sequence, the “method” paragraph including such items as detailed tasks, ammunition to be expended, timings, etc

Section commanders then select positions for their guns bearing in mind the considerations enumerated in para. 3 above.

Sections are then brought into action by one of the methods explained in Lesson 66.

5. The large majority of support platoon tasks will be carried out by **direct fire**. The occasions on which **indirect fire** might be employed are briefly :—

(i) When it is impossible or inadvisable to occupy a direct fire position.

(ii) When guns placed in depth for the defence of rear localities are required also to fire in front of the foremost troops and can do this by indirect fire only.

(iii) When it is desired to place guns in positions from which they can be withdrawn easily, and where direct fire positions will not give this facility.

6. The following lessons show the procedure for the reconnaissance and occupation of a position in ordinary conditions. In certain circumstances modifications or alterations will be necessary, and these must be left to the initiative of the commander.

It is not the intention, in these lessons, to lay down hard and fast rules.

METHOD OF INSTRUCTION.

Instructor's Notes.

The method of instruction will be as follows :—

1. Lecture on the subject-matter of paras. 1 to 5 above.

2. Teach and explain the duties in each lesson with the aid of a prepared sand table.

3. Headquarters training exercises on the ground or sand table with the personnel required for any particular phase.

4. *The duties of all commanders will be further practised in section and platoon training exercises, where all personnel and equipment are present. Technical as well as tactical problems should be included in these exercises.*

LESSON 75—OCCUPATION OF A POSITION—DAY

The platoon commander

1. On receipt of the battalion commander's orders the platoon commander will send a warning order to his second in command.

2. The platoon commander will move to his area. At this time he may or may not have his section commanders with him. If not, he will, if possible, move by way of the platoon R. V. He will take the section commanders forward with him on his reconnaissance. Otherwise he will move direct to his area. On arrival he will decide whether to employ direct or indirect fire.

He will ascertain the positions of our own troops, and the nature and extent of the targets. He will use a rangefinder to solve any overhead problems.

3. (i) If he decides to employ direct fire, the platoon commander will decide on :—

Section areas.

Positions in readiness for each section.

Arcs of fire and/or targets.

Positions for transport under cover.

Arrangements for local protection.

Positions of O. P. and platoon H. Q.

(ii) On completion of his reconnaissance, the platoon commander will issue orders to the section commanders including as many of the following points as may be necessary according to the situation :—

First target and/or arcs of fire.

Section areas.

Positions in readiness.

Arrangements for local protection.

Factors affecting safety.

Ammunition allotted.

Position of section transport under cover.

Position of Pl. H. Q. and Bn. H. Q.

(iii) He will send section commanders, accompanied by their rangefinders and orderlies, to section areas to carry out their reconnaissance.

4. (i) The platoon commander will give orders to his second in command and section corporals including :—

Positions in readiness and routes to them.

Section areas.

Ammunition required.

Position of transport under cover.

He will send the section corporals to lead their sections to their positions in readiness; he will give additional orders to his second in command concerning :—

Position of platoon H. Q.

Local protection.

When the second in command has carried out these duties he will report to the platoon commander for full information.

(ii) Alternatively where ground permits, the platoon commander having completed his reconnaissance may point out to the orderlies the position in readiness for each section, and tell them how many belts are required.

He will send them to the platoon R. V., with orders to guide the sections to their respective positions in readiness, and to inform the second in command of the position of platoon H. Q.

He will then issue orders to the section commanders as in para. 3 (ii) above and will send them on their reconnaissance.

5. When the platoon is in action the platoon commander will report this fact to Bn. H. Q.

6. When the tasks allotted by the Bn. commander necessitate the sections being widely dispersed, it may not be possible for the platoon commander to carry out a detailed reconnaissance for section areas. In this case the following procedure may be adopted—

(i) Having received his orders and decided on the distribution of sections and their approximate location, he will send back a warning order to the platoon second in command which will include :—

Role for each section—R. V. for second in command and section commanders (if not already present), and, if it will save time, an order for each section to move under the section corporal to a given R. V. in the vicinity of its probable area.

(ii) Issue orders including :—

Tasks.

Areas (can only be approximate).

Ammunition allotted.

Orders re. section transport.

Platoon and Bn. H. Q.

He will then send section commanders on their reconnaissance. Finally he will visit sections and ensure that the areas selected will allow them to carry out effectively the intentions of the battalion commander.

The section commander

7. The section commander will move to his section area accompanied by his rangetaker, and orderly.

(i) On arrival he will give orders to the rangetaker regarding :—

Arc of fire.

Points to which he requires ranges, (*i.e.*, targets and such points as will help him in the solution of any safety problem).

Time available.

Probable position of control post.

If not already given by the platoon commander as in para. 4 (i), he will first give orders to the section corporal, either personally or by orderly as to :—

Position in readiness.

Amount of ammunition at the guns.

Disposal of section transport.

(ii) He will reconnoitre for :—

Control post.

Two gun positions.

(iii) He will decide on reference points and on the method by which he is going to bring the guns into action.

(iv) He will bring the section into action by one of the methods given in Lesson 66.

(v) When the section is in action, he will report this fact to Pl. H. Q.

The section corporal.

8. (i) The section corporal will lead his section to its position in readiness.

(ii) On arrival at the position in readiness, he will order ".....prepare for action," will supervise the "prepare for action," detail loads and lead the section forward to the section area.

(iii) He will order guns into action when signalled for by the section commander, and will then report to the section commander for details regarding the situation, arcs of fire, targets, etc.

(iv) He will dispose of the transport under cover as ordered. He will organize the chain of supply from the vehicles to the section area.

Alternative Procedure.

9. Should it be considered possible for all N. C. Os. to be brought forward initially, the following modifications from the procedure given above will be made :—

(i) On arrival at the platoon area, the platoon commander will send his truck back to the platoon R. V. to bring the platoon to a forward R. V. close to the area.

(ii) At this latter rendezvous he will issue orders or will leave an orderly with instructions as to where all N. C. Os. are to join him. On completion of his reconnaissance he will give orders to all N. C. Os. as in 3 (ii) above.

(iii) The platoon second in command and section corporals will return to the platoon and carry out their duties as given in paras. 4, (i) and 8 above, section commanders accompanied by rangetakers and orderlies moving direct to their section areas and carrying out the duties given in para. 7 above.

Duties during action.

10. (i) Platoon commander.

(a) Keeps in touch with the situation, carrying out reconnaissance where necessary.

(b) Issues fire direction orders as required.

(c) Is responsible for replenishment of ammunition to sections.

(ii) Section commander.

(a) Controls the fire of his section and interprets the fire direction orders of the platoon commander into fire control orders.

(b) Locates and deals with targets in his arc.

(c) Solves safety problems as they arise, and indicates safety limits.

(d) Makes arrangements to continue firing in case observation is at any time interrupted.

LESSON 76—MODIFICATIONS FOR INDIRECT FIRE

Duties on decision to occupy the position

The platoon commander

1. Having decided to employ indirect fire the procedure for the occupation of a position will be as given in Lesson 75 except that the platoon commander will include in his preliminary orders to section commanders and section corporals that indirect fire is to be employed and the method.

Section commander

2. (i) He will ensure that the section orderly takes a director and pegs when he accompanies him on his reconnaissance.

(ii) During his reconnaissance of his section area he will decide on :—

Gun positions.

Positions in readiness } if not already selected by the
Method to be employed. } platoon commander.

Position of O. P.

Positions under cover for transport, and a point to which they will return when ordered (if not given by platoon commander)

(iii) He will send orders to the section corporal regarding :—

Position in readiness.

Ammunition with the guns.

Transport.

(iv) He will issue orders to his rangetaker regarding :—

1st Target.

Position of O. P.

Points to which ranges are required.

(v) When the section corporal reports to him he will give orders as in section drill indirect fire and will then move to his O. P. and make his calculations for engaging the target.

Section corporal

3. Moves the section to the position in readiness and on arrival orders "for indirect fire prepare for action." If necessary he details loads to gun numbers. He will give orders to the senior driver as to the disposal of transport.

He then moves the section forward in rear of the gun position and reports to the section commander for orders.

On receipt of orders he acts as in section drill, indirect fire.

At the first opportunity he will calculate the minimum Q. A. to clear the crest and inform the section commander.

Duties in action

4. Platoon commander—As for direct fire.

Second in command—At the disposal of the platoon commander as may be required.

Section commander—As for direct fire where applicable.

Section corporal—Commands at the gun position and reports the ammunition state to the section commander.

LESSON 77—OCCUPATION OF A POSITION—NIGHT.

Duties where preliminary reconnaissance can be carried out in daylight.

1. Before occupation.

The platoon commander.

(i) (a) The platoon commander moves to his platoon area, taking with him a reconnaissance party consisting of :—

Section commanders

Rangetakers.

Orderlies, with directors and pegs.

If not otherwise required the second in command may accompany reconnaissance.

(b) On arrival, he carries out his reconnaissance including the selection of areas for each section.

(ii) He now decides on :—

(a) The type of concealment and extent of digging to be carried out.

(b) Positions in readiness for the sections and a rendezvous for the platoon.

(c) The approaches from the rendezvous to the positions in readiness and to the section areas arranging that these routes can be recognized in the dark.

(d) The place to which transport will move after unloading. Whether it is to remain under platoon or section control.

(e) Arrangements for local protection.

(f) The position of platoon H. Q.

(iii) He gives the section commanders all available information regarding enemy, own troops and targets, and issues orders on the points included in sub-para. (ii) above.

(iv) The section commanders will move with their rangetakers and orderlies to their areas, carry out the pegging of their positions and make the necessary calculations for engaging their targets.

(v) When the reconnaissance is completed the party, less those required to safeguard the preparations, will return to the platoon, where the platoon commander will :—

(a) Prepare fire direction charts, issue and explain them to the N. C. Os. concerned.

(b) Issue all available information to the platoon.

(vi) On occasions the reconnaissance party may have to be reduced to a minimum :—

Platoon commander or his representative.

A rangetaker.

A man with director and pegs.

In this case the platoon commander will be responsible for the pegging of gun positions.

He will issue orders as in (iii) above on return to the platoon.

2. Duties on occupation of the position.

(i) On arrival at the rendezvous, if the section commanders were present during the reconnaissance they lead their sections direct to the positions in readiness and come into action.

(ii) If the section commanders were not present during the reconnaissance, guides (a range-taker or orderly) will meet sections at the position in readiness and lead them to the gun position.

(iii) When necessary the platoon commander orders the platoon second in command to collect the section transport and take them to the pre-arranged place.

Duties when no daylight reconnaissance is possible.

(i) It is possible to arrange for fixed lines with fair accuracy at close ranges, provided that a light can be shown on the place where the fire is to fall.

The platoon commander first chooses positions for his sections by personal reconnaissance.

(ii) Having given orders for the occupation of the positions he moves with a torch to the place or places where he requires the fire of the sections, and exposes a light in the direction of the guns.

(iii) A signal must be arranged to notify the platoon commander when guns have been correctly laid.

LESSON 78—DUTIES SPECIAL TO DEFENCE

Duties on decision to occupy a position.

In addition to the points already given in Lesson 75, para. 3, ii, the platoon commander will include in his orders:—

- (a) The position of our own troops in the vicinity of section areas and arcs of fire.
- (b) Approximate areas in which fixed lines are to fall.
- (c) Signal for defensive fire and rates of fire on fixed lines.
- (d) Any special orders for local protection and concealment.
- (e) Orders regarding digging.
- (f) Intercommunication.

Duties during the occupation.

i. The platoon commander—

- (a) He will ascertain the exact positions of all troops near his areas and in the area where his defensive fire is required to fall, so as to ensure necessary safety. He will also ascertain the positions from which the signal for defensive fire will be sent up.
- (b) He returns to the section positions and gives orders in detail as to fixed lines, the positions from which the signal for defensive fire will be sent up, and any other points in para. 1 above, not already sufficiently dealt with.
- (c) He then visits nearby infantry company commanders and arranges to keep in touch with them.
- (d) As soon as he receives messages from his sections that they are in action, he reports his platoon in action to his battalion commander.

ii. The second in command.

Having established platoon H. Q. and arranged for local protection, proceeds with platoon H. Q. vehicles to the position or positions ordered, takes over the section transport from the section corporals, and moves the whole as ordered.

He will then return to platoon H. Q. and obtain full information from the platoon commander.

iii. The section commander of each section.

On arrival in his section area, in addition to his duties given in Lesson 75, para. 7:—

- (a) Orders the range-taker to construct a range card for the arc, naming the points to which he requires ranges.
- (b) Orders the guns to be mounted to cover the arc.
- (c) Immediately he receives details of the fixed line, has the guns laid on this line.
- (d) Posts sentries.
- (e) Arranges for the concealment of the position and stores.
- (f) Organizes digging.
- (g) Orders the section corporal to take the transport to the position ordered.
- (h) Sends the section orderly to platoon H. Q. to report section in action.
- (i) Informs all ranks of the signal for defensive fire, the action to be taken in case of alarm, the position of temporary alarm post, and the details of ranges.
- (j) Selects permanent alarm posts, makes out the duty roster.
- (k) Marks in on his range card the area within his arc in which it is safe to fire.
- (l) He will take the earliest opportunity of visiting infantry posts near his area.

iv. The section corporal of each section.

- (a) Ensures that all stores are removed from the transport taken forward and placed under cover near the gun position.
- (b) When ordered by the section commander moves the section transport to the position ordered and hands it over to the platoon second in command or as otherwise ordered.
- (c) Reports to the section commander for full information.

LESSON 79—DUTIES SPECIAL TO WITHDRAWAL

1. The occupation of a position under conditions of withdrawal.

(i) The normal duties for occupation of a position in defence will be carried out, but special consideration will be given to readiness for movement and to facilities for a quick and covered withdrawal.

(ii) Provision must be made for bringing transport as close up as possible, consistent with safety, to section positions when the guns are ordered out of action. The platoon commander or his second in command will choose these forward positions for the section transport and notify them in orders to section commanders and corporals, but on occasions the selection may rest with section commanders, who will themselves inform their section corporals.

2. Preparation for withdrawal to a new position.

i. The platoon commander.

Previous to the withdrawal he may have time to reconnoitre the route to be followed but will usually delegate this duty to his second in command and may also instruct the latter to reconnoitre the new position. During the reconnaissance of the route of withdrawal any likely intermediate fire positions will be noted.

He will issue verbally, or by orderly, preliminary orders which will lay down :—

- (a) The method of withdrawal, including the route or routes to be followed.
- (b) A platoon rendezvous in rear of the first position or section rendezvous on the new position.
- (c) How the order to withdraw will be given (personally, in a verbal or written message or by signal).
- (d) The line of withdrawal of platoon H. Q.
- (e) Instructions as to keeping touch within the platoon during the withdrawal.

ii. The section commander.

He is responsible for reconnaissance of the route from his section position to the platoon rendezvous or to his section rendezvous on the new position. He may delegate this task to his section corporal.

3. Reconnaissance of a new position.

(i) When it is required to send a party back to reconnoitre a new position, the following personnel will generally be detailed :—
Second in command.

One platoon orderly.

Three rangetakers.

The party will take pegs.

ii. The platoon second in command.

(a) Will select section areas, gun positions, positions in readiness and a platoon H. Q.

(b) Will point out the section areas, arcs of fire, reference points and positions in readiness to the three rangetakers, who will act as section guides. They will then be posted on the line of withdrawal of the platoon, or if the sections are withdrawing independently, at section rendezvous, from where they will lead the sections to their respective areas.

When sections arrive in their areas the rangetakers pass on the above information to section commanders.

(c) Will send a message to the platoon commander informing him where the section guides will be posted and giving any essential information regarding the new position. He will remain on the new position, meeting the platoon

commander on the latter's arrival there, and reporting fully about it and the situation as known. The platoon commander will in turn communicate that information to the section commanders.

4. Withdrawal to the new position.

i. The platoon commander.

(a) Will give personally or send the order to withdraw, including any of the points in para. 2, i, above, which he has not previously given.

(b) Will control the movement of the sections from the platoon rendezvous or, if the sections move independently to the new position, keep touch with their progress.

ii. The section commander.

(a) On receipt of the order to withdraw will signal to the transport to come up to their forward positions, if necessary, and will then order "cease firing" and "on truck."

(b) When all stores and personnel are on the transport, will lead them back by the selected route to the platoon rendezvous or to the section rendezvous.

iii. The section corporal.

Will be responsible for bringing the transport forward when signalled up by the section commander.

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